15" TFT LCD Colour Monitor

LCD / TV

Service
Service
Service

150MT10P/00C
(CPT panel)

Smart Interface/PnP/Sliding Height Adjustment
High Bright Picture/Auto Picture Adjustment/Wide Viewing Angle

Service Manual

Horizontal frequencies
30 - 61 kHz

TABLE OF CONTENTS

Description	Page	Description	Page
Important Safety Notice	2	Repair tips	36
Technical Data	3	Colour Adjustment	37~42
TV control	4~6	Block Diagram and control pannel(C.B.A)	43
TV OSD menus	7~10	Scaler board C.B.A.	44~45
Connecttion to PC	11~12	Conjunction diagram (C.B.A) and Phone Jack PCB C.B.A.	46
Description of Controls	13~14	Sound Diagram(C.B.A)	47
Clock & Phase Adjustments	15	Video Decorder Diagram	48
OSD Control Structure	16~17	MCU Schematic Diagram	49
OSD Attention Signal	18	Scaler Diagram	50
Failure Mode of LCD Panel	19	Video I/O Schematic Diagram	51
Definition of Pixel Defects	20	Inverter Diagram and Layout Drawings	52
Wiring Diagram	21	Exploded View	53
Mechanical Instructions	22~24	Recommended Parts List	54
Electrical Instructions	25~27	Spare Parts List	55~58
Factory Adjustment	28	General Product Specification	59~94
Safety Test Requirements	29	General Trouble Shooting Guide	95~113
DDC Instructions	30~34	Quick View	114~115
DDC Data	35	Serial number modification- EEPROM(OSD)	116~117

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING.

REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

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Go to cover page

Important Safety Notice

Proper service and repair is important to the safe, reliable operation of all Philips Consumer Electronics Company** Equipment. The service procedures recommended by Philips and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Philips could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Philips has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Philips must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

** Hereafter throughout this manual, Philips Consumer Electronics Company will be referred to as Philips.

WARNING

Critical components having special safety characteristics are identified with a ⚠ by the Ref. No. in the parts list and enclosed within a broken line*
(where several critical components are grouped in one area) along with the safety symbol ⚠ on the schematics or exploded views.

Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Philips. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design.
Servicer assumes all liability.

* *Broken Line* ▬ ▪ ▬ ▪ ▬ ▪

FOR PRODUCTS CONTAINING LASER :

DANGER- Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

CAUTION- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION- The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Take care during handling the LCD module with backlight unit

- Must mount the module using mounting holes arranged in four corners.
- Do not press on the panel, edge of the frame strongly or electric shock as this will result in damage to the screen.
- Do not scratch or press on the panel with any sharp objects, such as pencil or pen as this may result in damage to the panel.
- Protect the module from the ESD as it may damage the electronic circuit (C-MOS).
- Make certain that treatment person s body are grounded through wrist band.
- Do not leave the module in high temperature and in areas of high humidity for a long time.
- Avoid contact with water as it may a short circuit within the module.
- If the surface of panel become dirty, please wipe it off with a soft material. (Cleaning with a dirty or rough cloth may damage the panel.)

Technical Data

Technical Specifications

LCD Panel
Screen type : TFT LCD
Screen dimensions : 15 " visual
Pixel pitch : 0.297 x 0.297 mm(15.0")
LCD Panel type : 1024 x 768 pixels
R.G.B. Vertical stripe
Anti-glare polarizer hardness
Effective viewing area : 304.1 x 228.1 mm (15.0")
Display Colors : 8 bits interface (16M colors)

SCANNING
Horizontal scan range : 30 kHz to 61 kHz (automatic)
Vertical scan range : 56 Hz to 76 Hz (automatic)

Video
Video dot rate : 80MHz
input impedance
-Video : 75 ohms
-Sync : 2 KOhm
Input signal levels : 700m Vpp
Synchronization input signals : Separate horizontal and vertical / composite ;TTL level, positive or negative, Sync On Green
Input Frequency :
XGA Hsync 48-61 KHz,Vsync 60-76Hz(N.I.)
SVGA Hsync 35-50 KHz,Vsync 56-75Hz(N.I.)
VGA Hsync 31-38 KHz,Vsync 60-76Hz(N.I.)
Video interface : D-Sub,S-Video,TV-RF, SCART or composite and components video

AUDIO
Input Level for PC/SVHS/SCART: 500mV nominal
Headphone out signal level : 4mW max.
Lodspeaker : 2 x 2.5 W

OPTICAL CHARACTERISTICS
Contrast ratio : 500 (typ.)
Brightness : 300 cd/m2(typ.)
Peak contrast angle :6 o'clock
White Chromacity : x:0.281 y : 0.311 (at 9300° K)
x:0.312 y : 0.338 (at 6500° K)
Viewing angle (C/R>5) : Upper>=60° (typ.)Lower>=70°(type)
Left and Right >=75° (typ.)
Response time : <= 25ms(typ.)

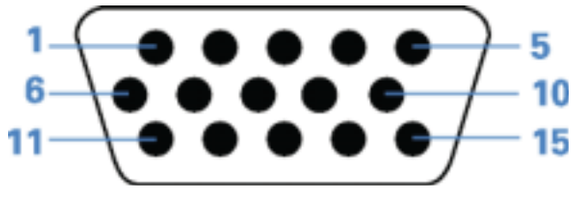
Resolution and Preset Modes
Maximum : 1024 x 768 at 75Hz
Recommended : 1024 x 768 at 60Hz

Physical Characteristics
Dimensions(WxHxD) : 391 x 366 x 200 mm (incl. Pedestal)
Weight (monitor only) : 5.1 kg

Tilt (Forward/Backward) : -5° / 25°
Power supply : 100 - 240 VAC, 50/60Hz
Power consumption : 48 W (typ.)
Temperature (operating) : 5°C to 35°C
Relative Humidity : 20% to 80%
System MTBF : 50K Hrs(CCFL 40Khrs)

Pin Asignment

1. The 15-pin D-sub connector (male) of the signal cable



Pin No.	Assignment		Pin No.	Assignment
1	Red video input		9	DDC+5V
2	Green video input		10	Logic ground
3	Blue video input		11	Identical output connected to pin 10
4	Identical output connected to pin 10		12	Serial data line (SDA)
5	Cable detect		13	H. Sync / H+V
6	Red video ground		14	V. Sync
7	Green video ground		15	Data clock line (SCL)
8	Blue video ground			

Automatic Power Saving

If you have VESA's DPMS compliance display card or software installed in your PC, the monitor can automatically reduce power consumption when power saving function active. And if an input from keyboard, mouse or other input devices is detected, the monitor will automatically "wake up". The following table shows the power consumption and signaling of this automatic power saving feature :

Power Management Definition					
VESA's mode	VIDEO	H-SYNC	V-SYNC	POWER USED	LED COLOR
ON	Active	Yes	Yes	48W(typ.)	Green
Stand-by	Blanked	No	Yes	< 2 W	Blinking GreenAm
Suspend	Blanked	Yes	No	< 2 W	Blinking GreenAm
OFF	Blanked	No	No	< 2 W	Blinking GreenAm

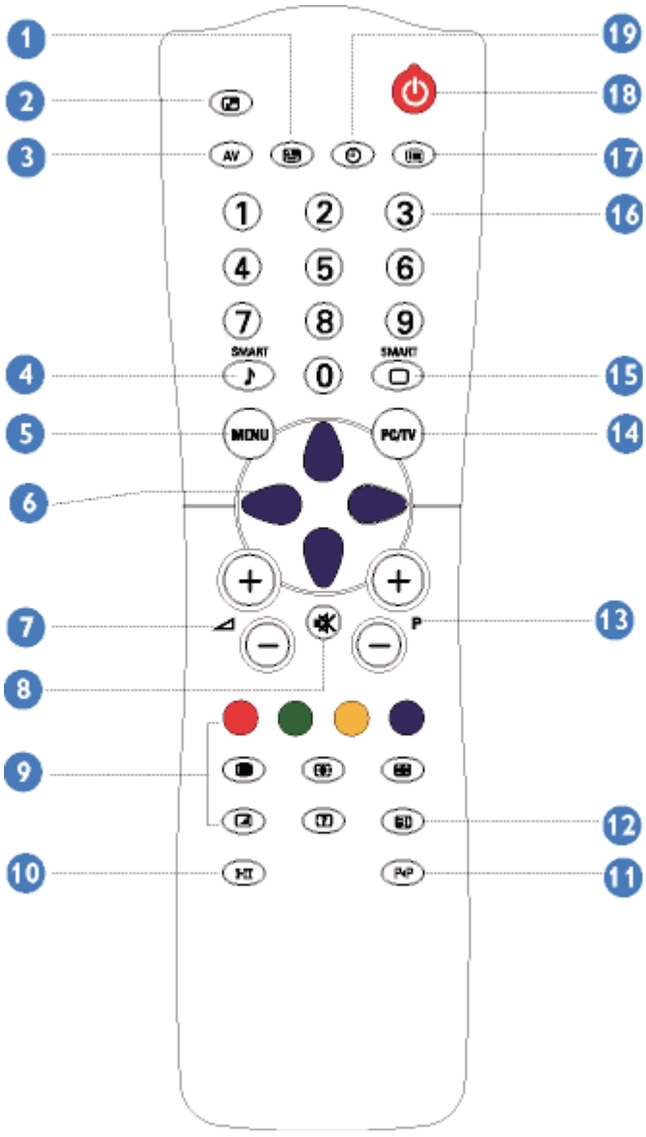
This monitor is ENERGY STAR© compliant. As an ENERGY STAR© Partner, PHILIPS has determined that this product meets the ENERGY STAR© guidelines for energy efficiency.

14 Factory preset mode:

Mode	Resolution	H. freq. / V. freq	Standard
1.	640 x 350	31.469Khz/70.087Hz	VGA
2.	720 x 400	31.469Khz/70.087Hz	VGA
3.	640 x 480	31.469Khz/59.940Hz	VGA
4.	640 x 480	35.000Khz/66.667Hz	Macintosh
5.	640 x 480	37.861Khz/72.809Hz	VESA
6.	640 x 480	37.500Khz/75.000Hz	VESA
7.	800 x 600	35.156Khz/56.250Hz	VESA
8.	800 x 600	37.879Khz/60.317Hz	VESA
9.	800 x 600	48.077Khz/72.188Hz	VESA
10.	800 x 600	46.875Khz/75.000Hz	VESA
11.	832 x 624	49.700Khz/75.000Hz	Macintosh
12.	1024 x 768	48.363Khz/60.004Hz	VESA
13.	1024 x 768	56.476Khz/70.069Hz	VESA
14.	1024 x 768	60.023Khz/75.029Hz	VESA

TV control

Use your remote controlier

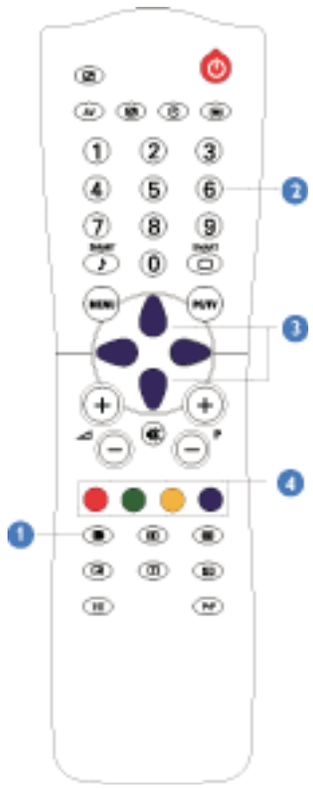


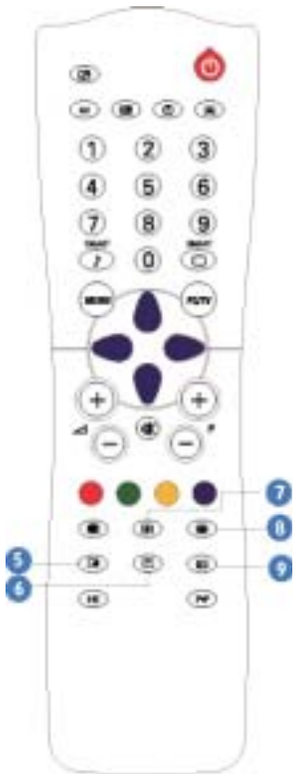
1 PIP Shift
2 PIP On/Off, Size
3 AV source
4 Smart sound controlsTo access a series of settings: VOICE, MUSIC, THEATRE and return to PERSONAL
5 Menu To display or exit from the menus
6 Cursor These 4 keys are used to move within the menus
7 Volume To adjust the sound level
8 Mute To disable or enable the sound
9 Teletext features
10 Sound mode To switch from STEREO to MONO or to choose between Dual I and Dual II for bilingual transmissions.For TV sets fitted with NICAM reception, depending on the transmission, you can switch from CAMSTEREO to MONO or choose between NICAM DUAL I, NICAM DUAL II and MONO. When the sound mode is switched to MONO, the indication is displayed in red.
11 Previous programme To access the previously viewed programme.12Screen informationTo display/remove the programme number, the name (if it exists), the time, the sound mode and the time remaining on the timer. Hold down for 5 seconds to permanently display the programme number on the screen.The volume level and the smart control adjustments are then displayed each time they are used.
13 Selecting TV programmesTo move up or down a programme. The number, (the name) and the sound mode are displayed for a few seconds.For some TV programmes the title of the programme appears at the bottom of the screen.
14 PC/TV mode selection
15 Smart picture controls To access a series of settings: RICH, NATURAL, SOFT, MULTIMEDIA and return to PERSONAL.
16 Numerical keys For direct access to programmes. For a 2 digit programme number, the 2nd digit must be entered before the dash disappears.
17 Program List
18 Standby To set the TV to standby mode. To switch the TV set on again, press -, +, or any digit between 0 and 9.
19 Sleep timer To select the length of time before the set automatically switches to standby (from 0 to 240 minutes)

TV Control

Using the Teletext (for areas where teletext service is available)

Teletext is an information system broadcast by certain TV channels which can be consulted in the same way as a newspaper. It also provides subtitles for the hard of hearing or people who are unfamiliar with the broadcast language (cable TV network, satellite channels, etc.).





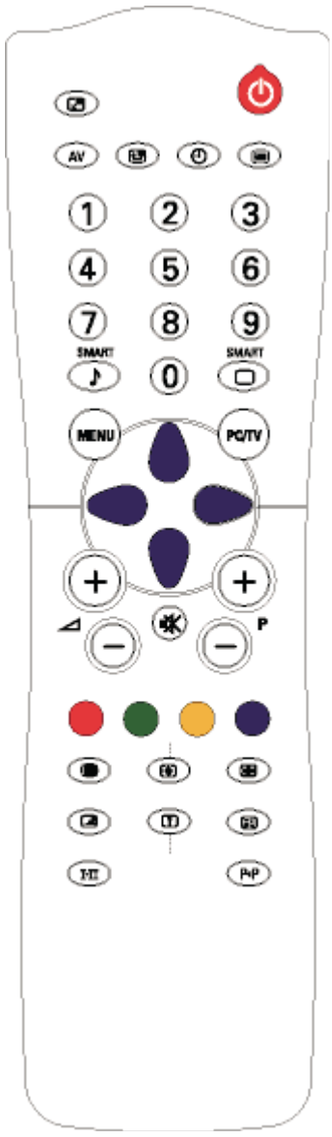
Press button	Result on Screen
1On/Off teletext	Display or exit teletext. The main index page presents a list of subjects to which you have access. Each subject has a corresponding page number (always 3 digits). Note: If selected TV channel does not broadcast teletext, P100 is displayed and the screen remains black. Exit teletext mode and choose another TV channel.
2Selecting a teletext page	Key in the required teletext page (3 digits). The page number is displayed at the top left hand corner of the screen. When the teletext page is located, the counter stops searching. If the counter keeps searching, it means that the page is not available for selection. If you make a mistake in keying the page number, you have to complete keying the 3-digit number before re-keying the correct page number.
3 Accessing a teletext page	Press the CURSOR UP button to display the previous page and the CURSOR DOWN button to display the next page.
4Direct Access to an item or corresponding pages	The 4-colour buttons allow you to access directly an item or corresponding pages.
5Mix	Allows you to superimpose the teletext page over the TV programme. Press the button the second time to return to teletext page only.
6Reveal/ Conceal	Press the button once to reveal hidden information (solutions to puzzles, riddles, etc.). Press the button the second time to conceal Information.
7Enlarge	Press the button once to enlarge and view the top half of the page. Press the button the second time to enlarge and view the bottom half of the page. Press the button the third time to return to normal size page.
8Hold	A selected page sometimes contains a few sub -pages. The sub-page will automatically move to the next sub-page after about 20 seconds. The total number of sub-pages are indicated at the top right hand corner of the screen. Press the button once to hold page and the second time tot release holding of page.
9Main Index	Press the button to return to the main index (generally on page 100).

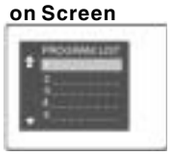
TV control

Go to cover page

Using the Programme Listing

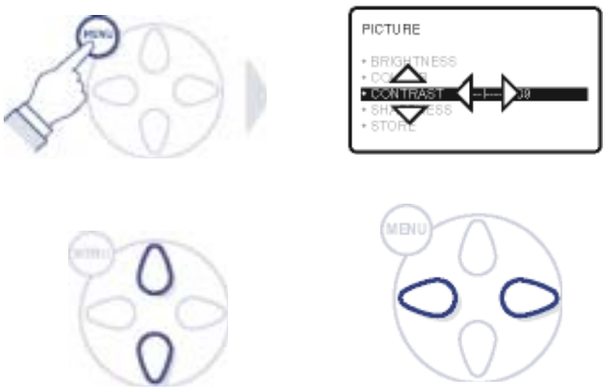
Programme listing feature allows you to navigate through a list of installed programmes for a quick overview of the channels installed on your television



Press button	Result	on Screen
	1. Display the list of installed programmes. The current channel is highlighted.	
	2. Cycle through the programme list and highlight the channel number you want to view.	
	3. Activate the channel you have selected.	
	4. Exit menu from screen or wait for the menu to time out and Disappear from screen.	

TV OSD Menus

Using other menus (With remote controller)



Choosing a language and country

1.Press the MENU key to display the main menu.
2.Select INSTALL , then press . The INSTALL menu appears. The LANGUAGE option is activated.
3.Press to go into the LANGUAGE menu.
4.Select your language with the keys.
The menus will appear in the chosen language.
5.Press to exit the LANGUAGE menu.
6.Select the option COUNTRY and press .
7.Select your country with keys.
If your country does not appear in the list, select OTHER.
8.Press to exit the COUNTRY menu.
9. To exit from the menus, press .

Automatic tuning

This menu allows you to automatically search for all the programmes available in your region (or on your cable network).

1.First carry out operations 1 to 8 above, then:
2.Press once to select AUTO STORE then press . The search begins. After several minutes, the INSTALL menu Reappears Automatically.
3.If the transmitter or the cable network broadcasts the automatic sort signal, the programmes will be correctly numbered.
4.If not, the programmes found will be numbered in descending order starting at 99, 98, 97, etc.
Use the SORT menu to renumber them. Some transmitters or cable networks broadcast their own sort parameters (region, languages, etc.). Where this is the case, make your choice using the keys And confirm with .To exit or interrupt the search, press the MENU key.
5.To exit from the menus, press .

Manual tuning

This menu allows you to store the programmes one by one.
1.Press MENU.
2.Select INSTALL ( ), then press . The INSTALL menu appears.
3.Select MANUAL STORE ( ) then press . The menu appears:
4.Press to go to the SYSTEM menu. Use to choose EUROPE (automatic detection*) or manual detection with WEST EUR (standard BG reception), EAST EUR (standard DK Reception), UK (standard I reception) or France (standards LL'). Then press to exit from the menu.
** Except for France (standard LL'): select the option FRANCE.*
5.Select SEARCH and press .
The search begins. As soon as a programme is found, the search will stop. If you know the frequency of the programme required, enter its number directly using the 0, 9 keys and go to step 7.
6.If reception is un-satisfactory, select FINE TUNE and hold down or key.
7.Select PROG. NO (programme number) and use the or 0 to 9 keys to enter the desired number.
8.Select STORE and press . The message STORED appears. The programme is stored.
9.Repeat steps 5 to 8 for each programme to be stored.
To exit: press the key.

TV OSD menus

Go to cover page

Sorting programmes

1.Press MENU key. The main menu is displayed.
2.Select INSTALL ( ), then press . The INSTALL menu appears.

3.Using the key, select SORT then press . The SORT menu appears. The FROM option isactivated.
Note: this menu works as follows: Change "FROM" (enter the current programme number),"TO" (enter the new Number), "EXCHANGE numbers" (the operation is carried out).
4.Select the programme you wish to renumber using Keys or 0 to 9.
Example: to renumber programme 78 as 2 press 7,8.
5.Select TO (using key) and enter the new number with Keys or 0 to 9 (for the example given, enter 2).
6.Select EXCHANGE (key) and press .
The message EXCHANGED appears, the exchange takes place. In our example, programme 78 is renumbered as 2 (and programme 2 as 78).
7.Select the option FROM (key) and repeat stages 4 to 6 as many times as there are programmes to renumber.
8.To exit from the menus, press .

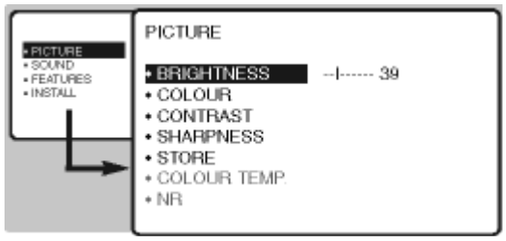
Programme name

You may, if you wish, give a name to the first 40 programmes (from 1 to 40).
1.Press MENU.
2.Select INSTALL ( ), then press . The INSTALL menu appears.
3.Press 5 items to select NAME (concealed at the bottom of the screen,) then press . The menu Appears:

4.Select the programme you wish to name using the keys 0, 9 Or - P +.
Note: at the time of installation, the programmes are automatically named when the identification signal is transmitted.
5.Use the keys to move within the name display area (5 characters).
6.Use keys to choose the characters.
7.Press MENU when the name has been entered.
The programme name is stored.
8.Repeat steps 4 to 7 for each programme to be Named.
9.To exit from the menus, press .

Adjusting the picture

1.Press MENU then . The PICTURE menu Appears:



2.Use keys to select a setting and keys to Adjust.
Note: the menu is a scroll-down menu.
Keep the key held down to access the settings hidden at the bottom of the screen.
3.Once the necessary adjustments have been made, select the option STORE and press to store them.
4.To exit from the menus, press .

Description of the settings:
BRIGHTNESS: alters the brightness of the image.
COLOUR: alters the colour intensity.
CONTRAST: alters the variation between light and dark tones.
SHARPNESS: alters the crispness of the image.
STORE: stores the picture settings.
COLOUR TEMP (colour temperature): adjusts the colour temperature of the picture. Three options are available here:COOL (blue white), NORMAL (balanced) or WARM (red white). NR (Noise Reduction): alleviates fuzziness (snowy picture). This setting is useful when reception is Difficult.
ACTIVE CONTROL (only available on certain versions): optimizes the quality of the picture according to the quality of reception.This adjustment is in the OPTIONS menu.

TV OSD Menus

Adjusting the sound

1.Press MENU, select the SOUND option ( ) and press .
The SOUND menu appears:

2.Use keys to select a setting and keys to Adjust.
Note: to access the AVL setting (hidden at the bottom of the screen) hold down key.
3.Once the necessary adjustments have been made, Select the option STORE and press to store them .
4.To exit from the menus, press .

Description of the settings:
TREBLE: alters the level of the high frequency sound.
BASS: alters the level of the low frequency sound.
BALANCE: to balance the sound between the left and right speakers.
DELTA VOLUME (volume difference) : allows you to compensate for the volume differences between the different programmes or the EXT sockets. This setting is available for programmes 1- 40 and the EXT Sockets.
STORE: stores the sound settings.
AVL (Automatic Volume Leveller): automatic volume control used to avoid sudden increases in volume, particularly when changing programmes or during Advertisements.

Timer function

This menu allows you to use your TV as an alarm Clock.
1.Press MENU.
2.Select FEATURES ( ), and press twice.
The TIMER menu appears:

3.Press to enter and exit the sub-menus and use Keys to adjust:
4.TIME: enter current time. Note: the time is updated automatically each time the set is switched on using teletext information taken from programme 1. If programme 1 does not have teletext, the update will not take place.
5.START TIME: enter the start time.
6.STOP TIME: enter the stop time.
7.PROG; NO;: enter the number of the programme Required.
8.ACTIVATE: you can set the alarm to be activated:
ONCE ONLY for a one-off alarm,DAILY for a daily alarm or STOP to cancel.
9.Press to set the TV to standby. It will automatically switch on at the time programmed. If you leave the TV switched on, it will only change programme at the time indicated.
The combination of the CHILD LOCK and TIMER functions may be used to limit the length of time your television is in use, for example, by your children.

TV OSD menus

Go to cover page

Locking the set

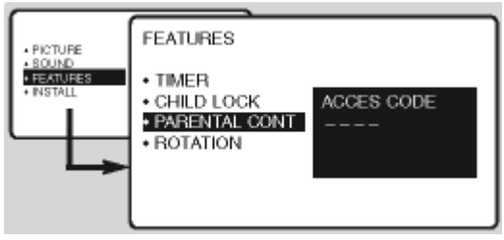
You can bar access to certain programmes or completely lock the set by locking the keys.

Locking programmes

1.Press MENU.

2.Select FEATURES ( ) and press .

3.Select PARENTAL. CONT. ( ) and press .



4.Enter your confidential access code. The first time, enter the code 0711 then confirm by re-entering 0711. The menu appears.

5.Press to go into the menu.

6.Use keys to select the required programme and confirm With . The symbol is displayed alongside the programmes or sockets that have been locked.

7.Press to exit.

To watch a programme which has been locked you will now need to enter the confidential code; otherwise the screen will remain blank. The INSTALL menu access is also locked.

Caution: in the case of encrypted programmes which use an external decoder, it is necessary to lock the corresponding EXT socket.

To unlock all programmes

Repeat stages 1 to 4 above, then select CLEAR ALL and press .

To change the confidential code

Repeat stages 1 to 4 above, then:

5.Select CHANGE CODE and enter your own 4-digit Number.

6.Confirm by entering it again. Your new code will be stored.

7.Press to exit from the menus.

If you have forgotten your confidential code, enter the universal code 0711 twice.

Connection to PC

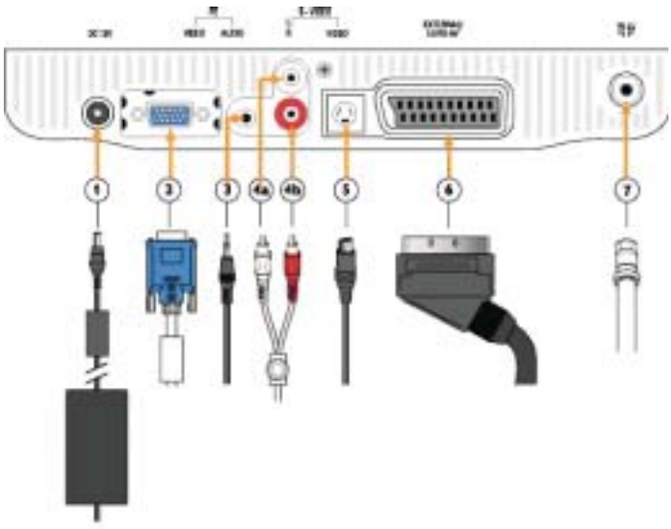
Setting up and connecting your monitor/TV

Make sure to power off your monitor/TV befoe the installation.

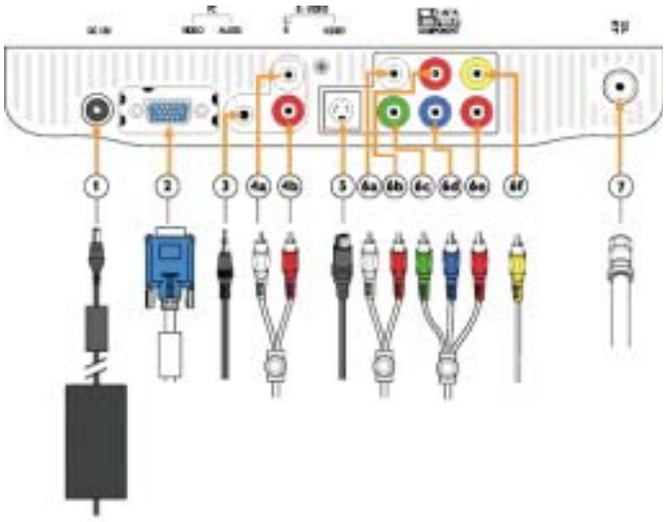
-Connecting the monitor/TV

.Connect the cables to theback of your monitor/TV by following step 1~7:

(Europe)

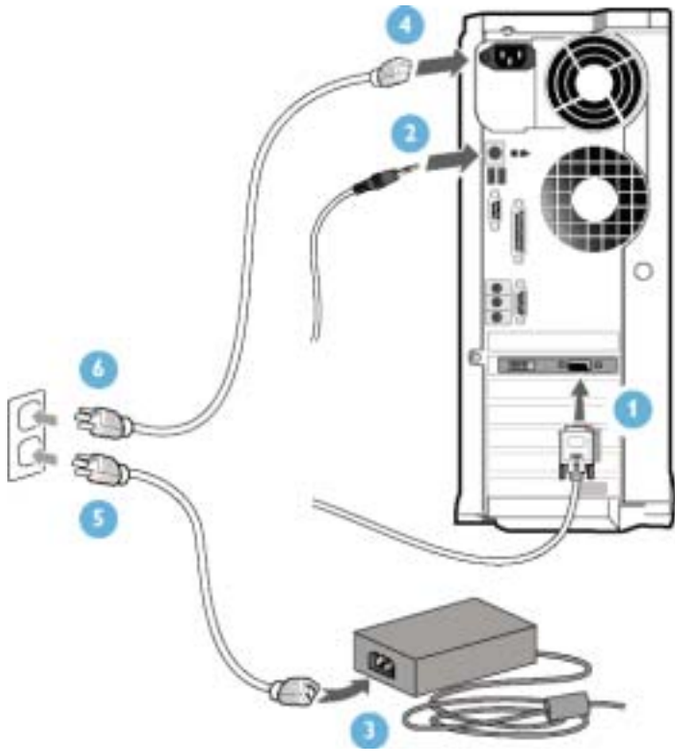


(North America and Asia pacific)



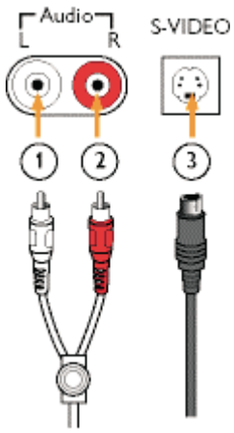
Connect to PC

1. Connect the cables to back of your computer by following step 1~6.
2. Power on your computer and monitor/TV, make sure the PC mode is selected( ). If it is not, please push the PC, TV/VIDEO selection button to select the PC mode.
3. If your monitor display the computer image then the installation is successful.
4. If not successful, please go to "Troubleshooting" chapter.
5. For installation of monitor driver for Microsoft windows, please go to the "Monitor Driver Installation" chapter.



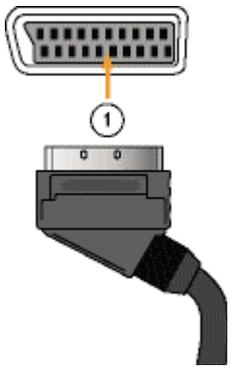
Connect to DVD/VCD/VCR

Connect to DVD/VCR/VCD through S-VIDEO



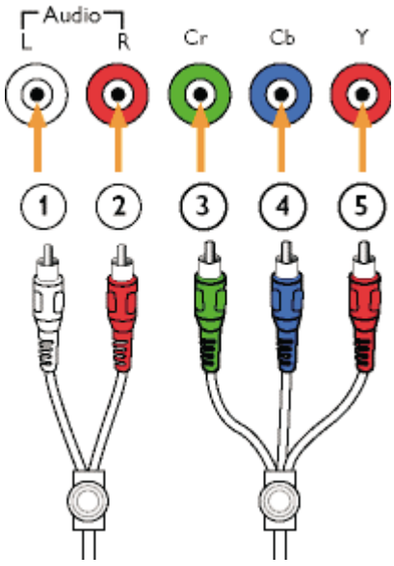
Connection to PC

Connect to DVD/VCR /VCD through SCART (for Europe)



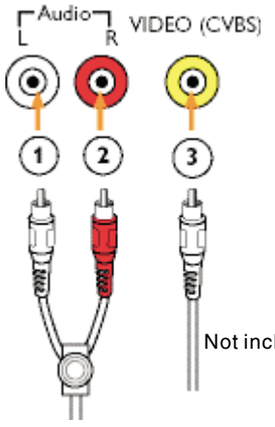
Not included accessory

Connect to DVD/VCR /VCD through composite video
(For AP and North America)



Not included accessory

Connect to DVD/VCR /VCD through component video
(For AP and North America)

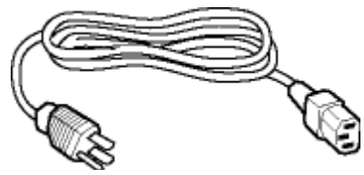


Not included accessory

Accessory Pack

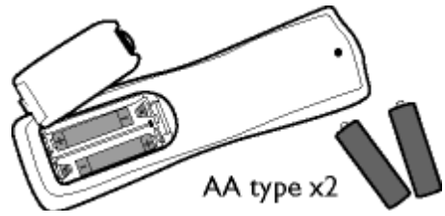
Unpack all the pats.

Power cable WE : 3138 128 74931
NAFTA : 3138 128 74901



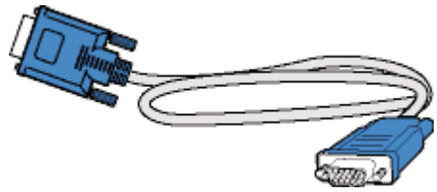
Remote controller & batteries

RC25106/00 : 3139 228 89481(WE)
RC25107/00 : 3139 228 89471(NAFTA)
BAT ZNC 1.5V R6/AA :9299 000 10137



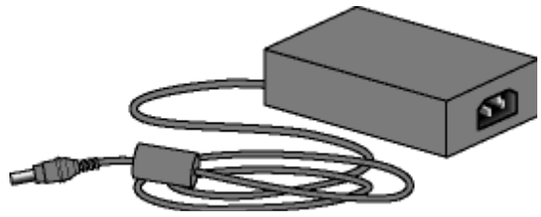
PC audio in cable (3138 188 72741)

VGA signal cable(3138 168 78511)



Power adapter(8238 277 10851)

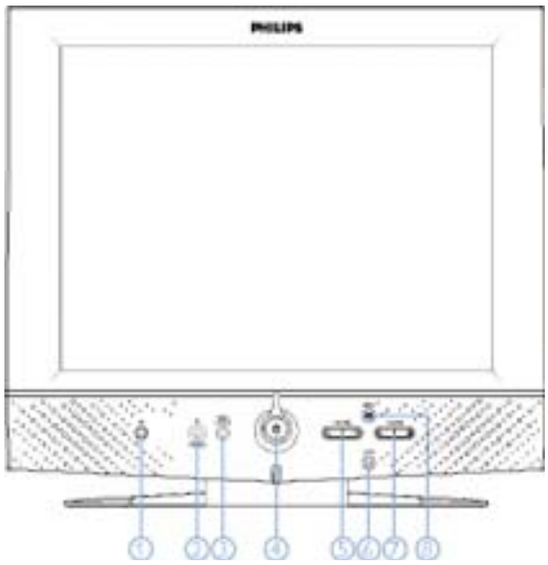
(Use only AC/DC adapter branded Philips, Model SA165A-1250V-3P.)



E-DFU pack(3138 117 03666)

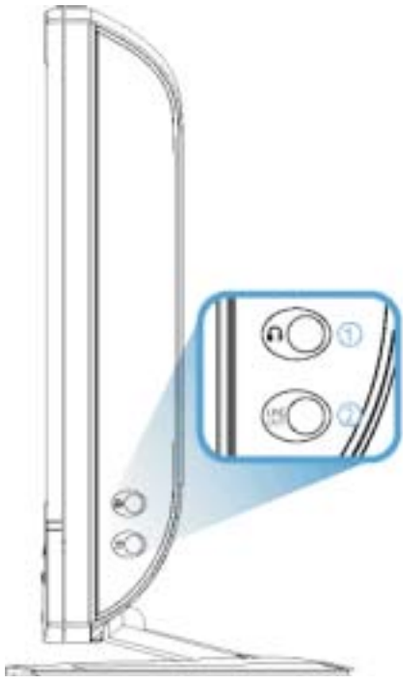
Description of Controls

Front View Product Description



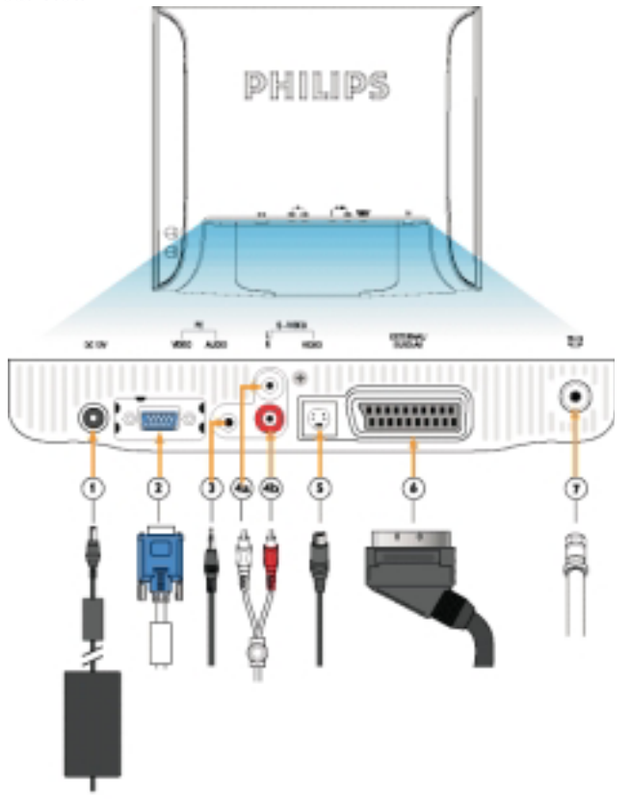
1 **PIP** Activate PIP (Picture in Picture) window and select size
2 **PC<->TV/Video** Switch the monitor between PC mode and TV/Video mode
3 **VIDEOSOURCE** TV/Video source selection
4 Power switch On/Off
5 Increase or decrease the channel number Or up or down the highlighted function in OSD
6 AUTO Automatically adjust the H/V position, phase and clock Setting
7 + − Increase or decrease the level of audio volume Or decrease or decrease the highlighted function in OSD
8 **MENU OK** Open the OSD and select the highlighted function

Side View

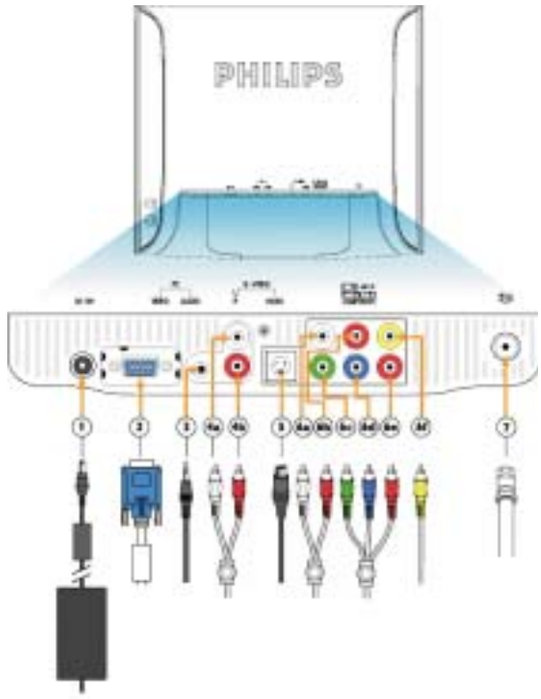


1 Headphone jack

Rear View



(Europe)
1. DC 12VDC 12V power in
2. PC - VideoD-Sub input
3. PC - AudioPC Stereo input
4. S-VIDEO (L)AV audio (L)
   S-VIDEO (R)AV audio (R)
5. S-VIDEO S-VIDEO in
6. EXTERNAL/EURO-AV SCART connection (for Europe only)
7. 75Ω TV Antenna or CATV cable in



Description of Controls

Go to cover page

(North America and Asia Pacific)

1.DC 12V DC 12V power in
2.PC - Video D-Sub input
3.PC - Audio PC Stereo input
4.S-VIDEO (L) AV audio (L)
S-VIDEO AV audio (R)
5.S-VIDEO S-VIDEO in
6.L R - AV IN 6a Audio (L) in
Y-Pb-Pr 6b Audio (R) in
Component 6c CVBS in
6d, e, f Component video in
7.75 Ω TV Antenna or CATV cable in

Optimizing Performance

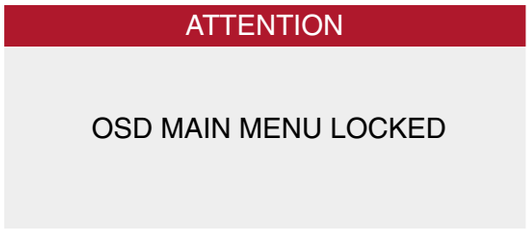
For best performance, ensure that your display settings are set at 1024x768@60Hz (for 15") or 1280x1024, 60Hz (for 18").

CLOCK & PHASE Adjustments

Front control panel

To Lock/Unlock OSD function

The OSD function can be locked by pressing **OK** button for more than 10 seconds, the screen shows following windows for 3 seconds. Everytime when you press **OK** Or **AUTO** button, this message Appears On the screen automatically. The ▲ & ▼ (CHANNEL) , + & − (VOLUME) hotkey are still functional for CHANNEL and VOLUME expectively while OSD locked



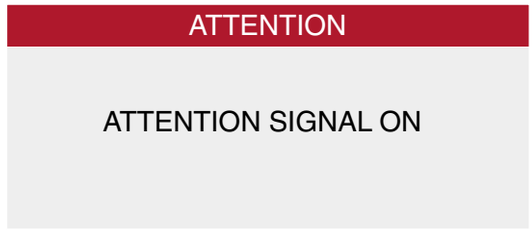
Locked OSD function can be released by pressing **OK** button for more than 10 seconds. While press **OK** button for OSD unlocked purpose, the screen will keep showing OSD MAIN MENU LOCKED until OSD function unlocked and screen automatically shows following window for 3 seconds.

Switch ON/OFF attention signals

All attention signals can be switched off by keep pressing **AUTO** button for more than 10 seconds if there is no video signal supplied.

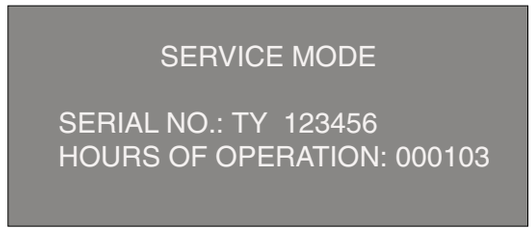
Fig. 2

Recover attention signals by pressing **AUTO** button for more than 10 seconds without video signal input.



Access Service Mode

Operating monitor with no signals (power saving mode), keep pressing **OK** button for more than 10 seconds. Following information will appear on the screen. Leave service mode by either re-feed video signal or simply turn off and on the power of monitor.



Access Factory Mode

To hold **OK** And **AUTO** buttons then power on the monitor. Press **OK** to bring up OSD menu for confirmation as below:

In the factory mode, once video signal removed, a full white pattern will be display on the screen as Fig.1 in stead of power saving mode. In other words, the power saving function will be disable in the factory mode.

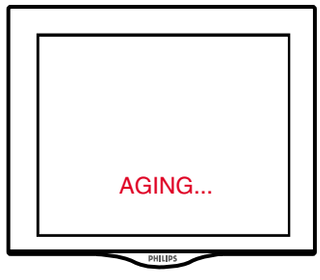


Fig.1

OSD Control structure

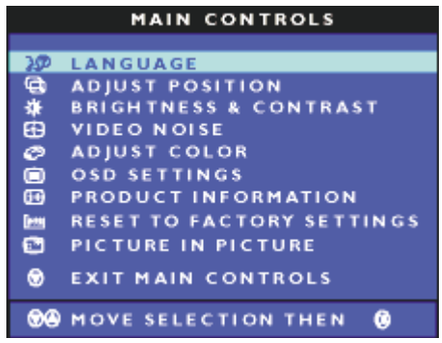
Go to cover page

The OSD Tree

Below is an overall view of the structure of the On-Screen Display. You can use this as reference when you want to later on work your way around the different adjustments.

- In PC Mode:

In PC mode

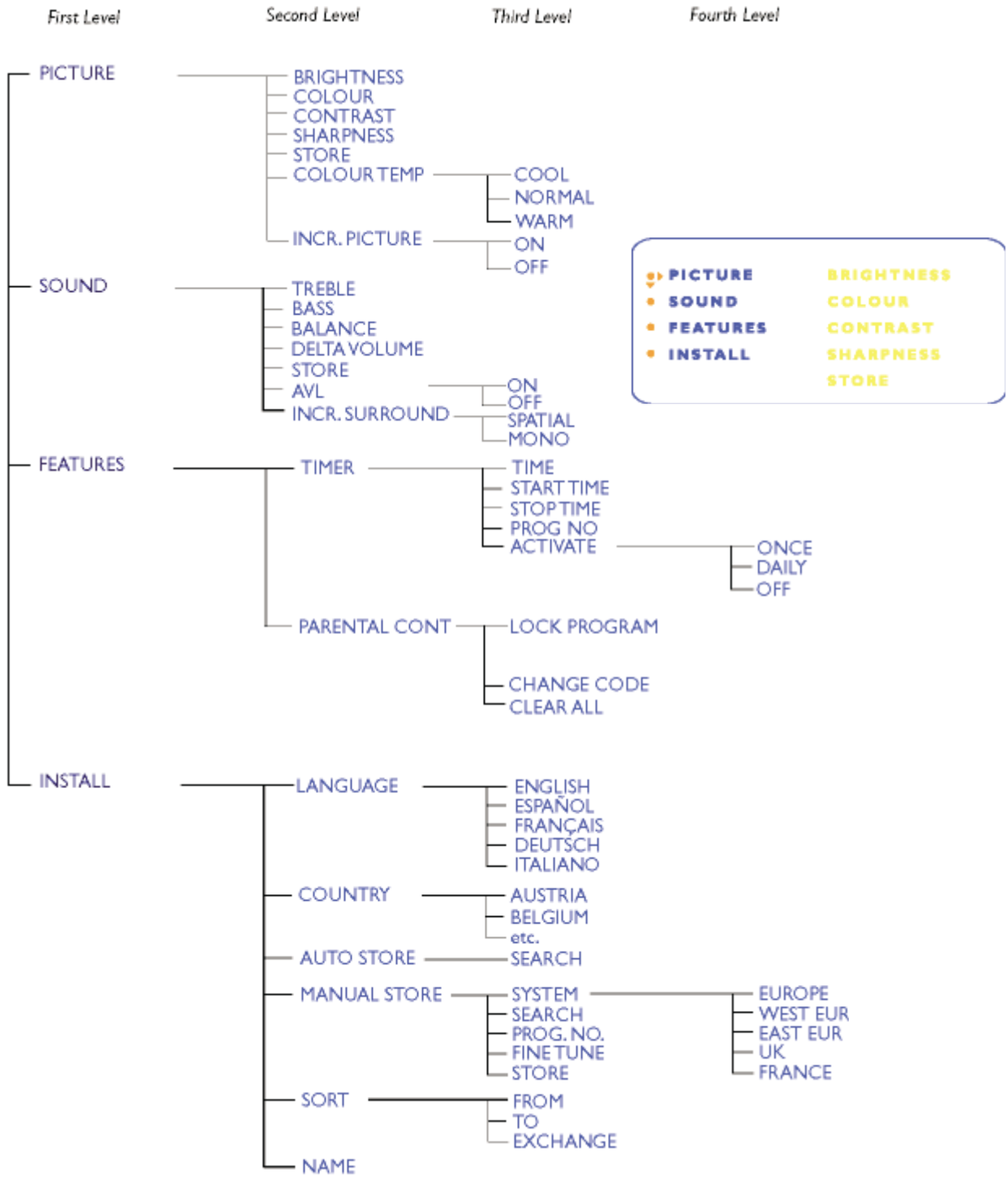


First Level	*Second Level*	
LANGUAGE	ENGLISH	
	ESPAÑOL	
	FRANÇAIS	
	DEUTSCH	
	ITALIANO	
ADJUST POSITION	HORIZONTAL	
	VERTICAL	
BRIGHTNESS & CONTRAST	BRIGHTNESS	
	CONTRAST	
VIDEO NOISE	PHASE	
	CLOCK	
ADJUST COLOR	ORIGINAL PANEL COLOR	
	9300K FOR CAD/CAM	
	6500K FOR IMAGE MANAGEMENT	
	USER PRESET	RED
		GREEN
		BLUE
OSD SETTINGS	HORIZONTAL	
	VERTICAL	
PRODUCT INFORMATION	SERIAL NO.	
	RESOLUTION	
RESET TO FACTORY SETTINGS	NO	
	YES	
PICTURE IN PICTURE	POSITION	HORIZONTAL
		VERTICAL
	AUDIO SOURCE	TV/VIDEO
		PC
EXIT MAIN CONTROLS		

• Specifications are subject to change without prior notice.

OSD Control structure

In TV/Video Mode

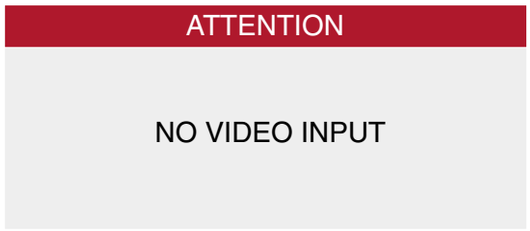


• *Specifications are subject to change without prior notice.*

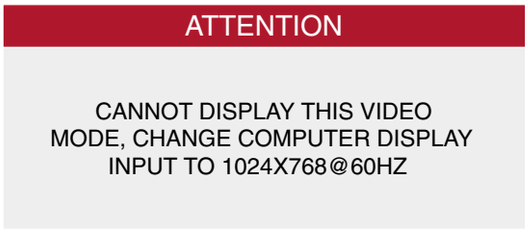
OSD Attention signals

The monitor will detect various display situation automatically. When the monitor detects the problems, the screen will show the different warning signals to remind you what is happen to your monitor.

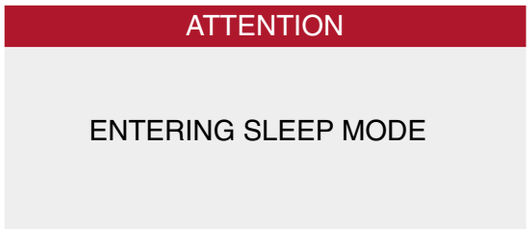
NO VIDEO INPUT
This screen appears if there is no video signal input. Please check that the signal cable is properly connected to the video card of PC and make sure PC is on.



CANNOT DISPLAY THIS VIDEO MODE..
This screen warns when the input frequency from the computer is not a standard video mode or out of the monitor's scanning range. Please change the display mode of the operating software in the computer(i.e. Windows) to 1024 x 768@ 60Hz for best display results.



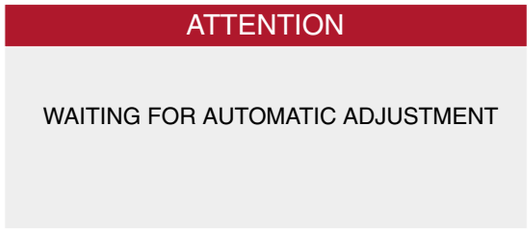
ENTERING SLEEP MODE
This screen appears when the monitor is about to enter the sleep mode. Please press any key on the keyboard or click the mouse to wake up the monitor and computer.



USE 1024 X 768 FOR BEST RESULT
This message appears at the top of the OSD window when the video mode input is not the recommended 1024x768. Other modes may result in some picture distortion. Please adjust the video mode to 1024x768 at 60Hz for best display quality.

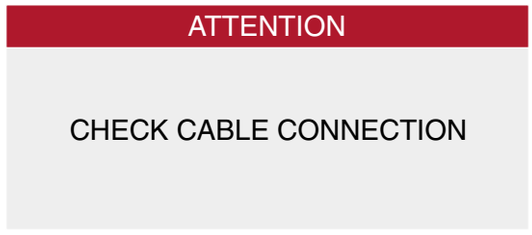
USE 1024x768 FOR BEST RESULT

WAIT FOR AUTOMATIC ADJUSTMENT
This screen appears when you touch the AUTO button. It will disappear when the monitor is properly adjusted.



SECOND VIDEO IS NOT AVAILABLE
When you select video input between Analog or Digital signal via INPUT SELECTION function of OSD menu, if the one you are selecting is not available, following message will appear on the screen then switching back to the previous setting automatically.

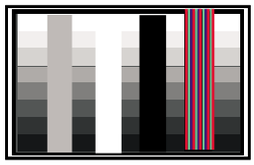
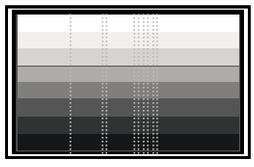
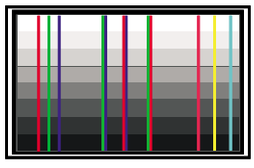
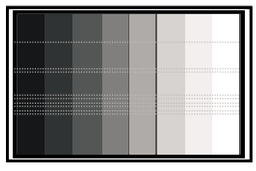
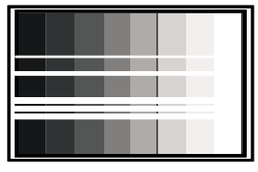
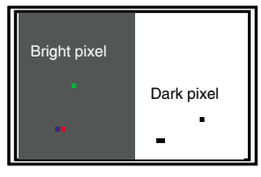
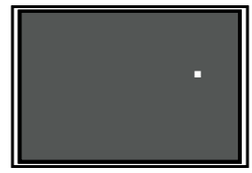
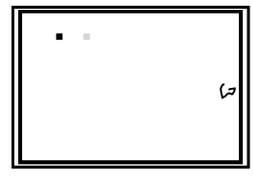
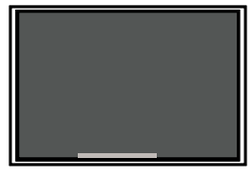
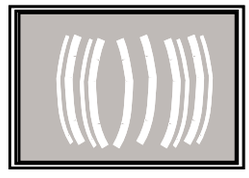
CHECK CABLE CONNECTION
This message appears when a signal cable is disconnected while computer is working.



Failure Mode of LCD panel

Quick reference for failure mode of LCD panel

This page presents problems that could be made by LCD panel. It is not necessary to repair circuit board. Simply follow the Mechanical instruction o n this manual to eliminate failure by replace LCD panel or backlight tubes.

Failure description	Phenomenon
Vertical block defect	
Vertical dim lines	
Vertical lines defect (Always bright or dark)	
Horizontal block defect	
Horizontal dim lines	
Horizontal lines defect (Always bright or dark)	
Has bright or dark pixel	
Polarizer has bubbles	
Polarizer has bubbles	
Foreign material inside polarizer. It shows linear or dot shape.	
Concentric circle formed	
Bottom back light of LCD is brighter than normal	
Backlight un-uniformity	
Backlight has foreign material. Black or white color, linear or circular type	

Go to cover page

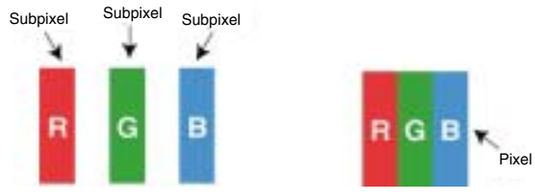
Definition of Pixel Defects

0. General

This section explains the different types of pixel defects and defines acceptable defect levels of each type. In order to qualify for repair or replacement under warranty, the number of pixel defects on a TFT LCD panel must exceed these acceptable levels.

1. Definition of Pixels and Subpixels

A pixel, or picture element , is composed of three subpixels in the primary colors of red, green and blue. Many pixels together from an image. When all subpixels of a pixel are lit, the three colored subpixels together appear as a single white pixel. When all are dark, the three colored subpixels together appear as a single black pixel. Other combinations of lit and dark subpixels appear as single pixels of other colors.



2. Types of Pixel Defects

Pixel and subpixel defects appear on the screen in different ways.

Bright dot defects
Bright dot defects appear as pixels or subpixels that are always lit or On . These are the types of bright dot defects:.

One lit red, green or blue subpixel

Two adjacent lit subpixels:
- Red + Blue = Purple
- Red + Green = Yellow
- Green + Blue = Cyan (Light Blue)

Three adjacent lit subpixels
(One white pixel)

Black dot defects
Black dot defects appear as pixels or subpixels that are always dark or off . These are the types of black dot defects:

One dark subpixel

Two or three adjacent dark subpixels

3. Pixel Defect Tolerances

In order to qualify for repair or replacement due to pixel defects during the warranty period, a TFT LCD panel in a PHILIPS flat panel monitor must have pixel or subpixel defects exceeding the tolerances listed in the following tables.

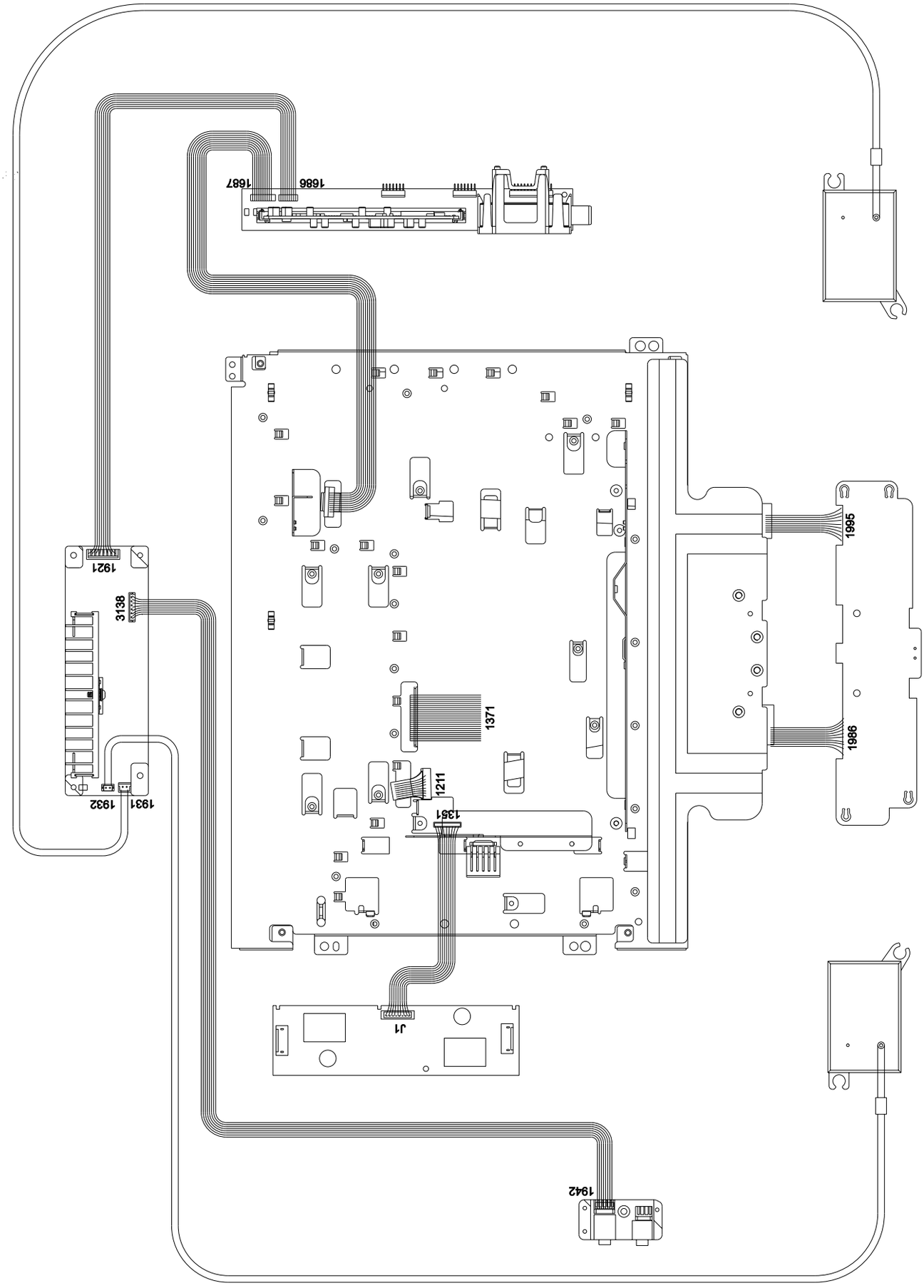
BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	**150MT**
1 lit subpixel	4 or fewer
2 adjacent lit subpixels	2 or fewer
3 adjacent lit subpixels (one white pixel)	0
Distance between two bright dot defects*	15 mm or more
Bright dot defects within 20 mm circle	3 or fewer
Total bright dot defects of all types	4 or fewer

BLACK DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	**150MT**
1 dark subpixel	4 or fewer
2 adjacent dark subpixels	2 or fewer
3 adjacent dark subpixels	0
Distance between two black dot defects*	15 mm or more
Black dot defects within 20 mm circle*	3 or fewer
Total black dot defects of all types	4 or fewer

TOTAL DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	**150MT**
Total bright or black dot defects of all types	4 or fewer

Note: 1 or 2 adjacent subpixel defects = 1 dot defect

Wiring Diagram

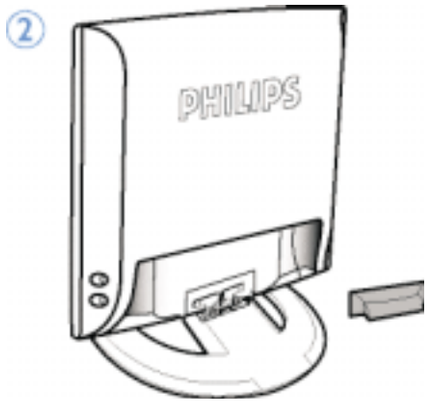


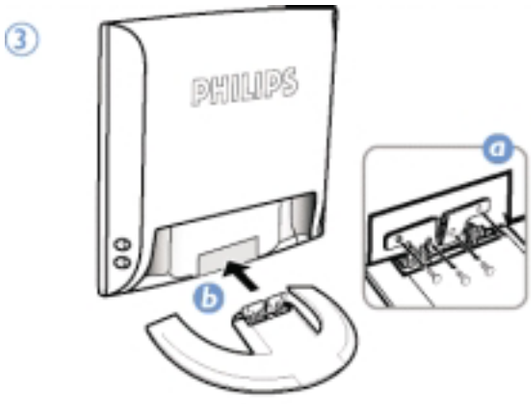
Mechanical instructions

Condition

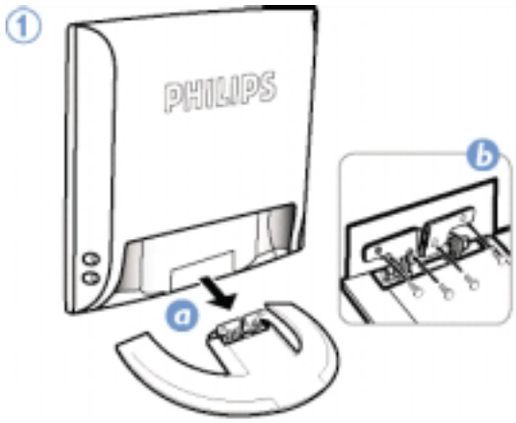
- for VESA standard mounting applications
- for optional bases replacement

Remove the base





Re-install the base



5) Push

Mechnical instructions

1. Control panel bezel removal
Using the Minus(-) driver to find the groove position between the front cabinet and the back cover on the downside of set as Fig.1

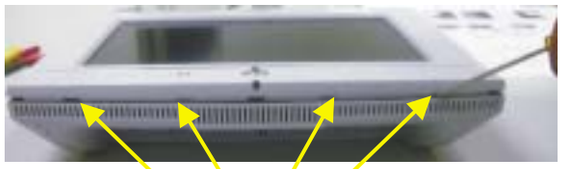


Fig. 1
Groove position

2. Control panel Bezel removal asFig.2

Fig.2 control panel

3.- Remove the connect 1995
- Remove the connect 1986
- Remove the L/R speaker connector

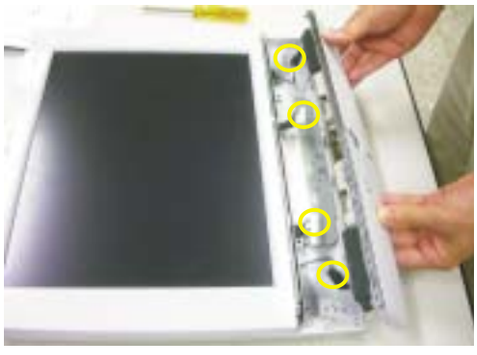


Fig. 3

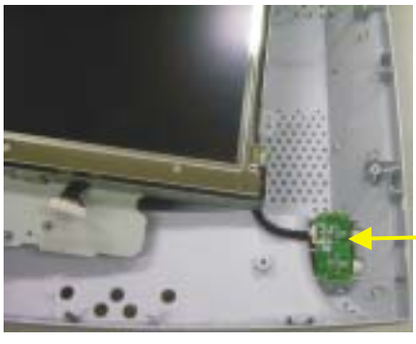
4. Front cover removal
- Using the minus(-) driver to find the groove position at the right ,Left and top edge to open. Fig.4

Left side

Fig. 4

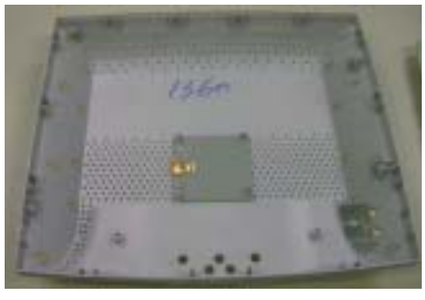
Right side

Top side



phone jack PCB
3138 158 51981

Fig. 5



Mechanical instructions

Go to cover page

Fig. 6 :
Removal LCD panel ,Remove 4 screws in the backcover

Fig. 6

Fig. 7 :
Removal Audio PCB assy , Remove 4 screws in the LCD pannel

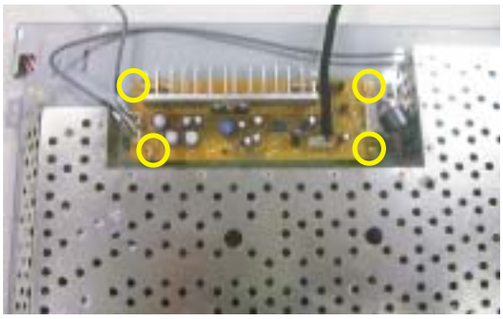


Fig. 7

Fig. 8 :
After removing metal shield

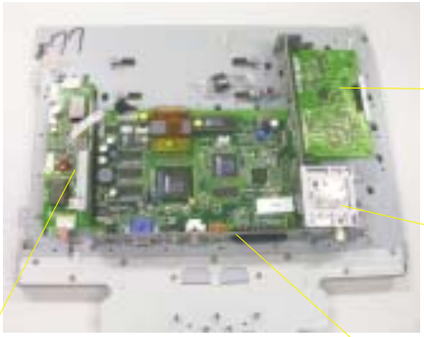
Fig. 8

Fig. 9 :
Conjunction PCB assy

Fig. 9

Fig. 9 :
1.Remove 1921 connector in the audio PCB assy
2.Remove 1995 connector in the control PCB assy

Fig. 9



A10 SSB Assy
3139 137 25771

Tuner function
3138 149 70531

Inverter board
8238 27710891

Fig. 10

Mian board
3138 158 52661

Service position
Fig. 10

LCD Pannel(CPT)
CLAA150XE01
8238 277 09841

Electrical instructions

0. General

When carry-out the electrical settings in many cases a video signal must be applied to the monitor. A computer with :

- ATI VGA 1024 V6-1.04/PH BETA4 interface card
- PGA 1024 (4822 212 30916), Mach 8.
- PGA 1280 (4822 212 30917), Mach 32.
- ATI GPT-1600 (4822 397 10065), Mach 64 (up to 107kHz)

are used as the video signal source. The signal patterns are selected from the "service test software" package, see user guide 4822 727 19896 (ATI1024), or 4822 727 20273 (PGA 1280), or 4822 727 21046 (GPT-1600).

0.1 **With normal VGA card:**
If not using the ATI card during repair or alignment, The service engineer also can use this service test software adapting with normal standard VGA adaptor and using standard VGA mode 640 x 480, 31.5 kHz/60 Hz (only) as signal source.

0.2 **AC/DC Measurement:**
The measurements for AC waveform and DC figure is based on 1024 x 768 48kHz/60 Hz resolution mode with test pattern "32 gray scale".

Power input: 110V AC

1.General points

1.1 During the test and measuring, supply a distortion free AC mains voltage to the apparatus via an isolated transformer with low internal resistance.

1.2 All measurements mentioned hereafter are carried out at a normal mains voltage (90 - 132 VAC for USA version, 195 -264 VAC for EUROPEAN version, or 90 - 264 VAC for the model with full range power supply, unless otherwise stated.)

1.3 All voltages are to be measurement or applied with respect to ground, unless otherwise stated. Note: don't use heat-sink as ground.

1.4 The test has to be done on a complete set including LCD panel in a room with temperature of 25 +/- 5 degree C.

1.5 All values mentioned in these test instruction are only applicable of a well aligned apparatus, with correct signal.

1.6 The letters symbols (B) and (S) placed behind the test instruction denotes
(B): carried out 100% inspection at assembly line
(S): carried out test by sampling

1.7 The white balance (color temperature), has to be tested in subdued lighted room.

1.8 Repetitive power on/off cycle are allowed except it should be avoided within 6 secretary.

2. Input signal

2.1.1 Signal type
Video : 0.7 Vp-p linear, positive polarity
Sync. : TTL level, separate, positive or negative polarity
Signal source: pattern generator format as attachment.
(table 1 to 14) Reference generator : CHROMA 2200 or 2250

2.1.2
RF Signal : Aerial input
Video signal : SCART input(Europe mode only)
Cinch input (NAFTA,AP modeel only)
S video input
Audio signal : for S-terminal L/R audio input
PC line in
Audio Line out

2.2 PC Input signal mode

Factory preset video resolution

Dot rate (MHz)	H.freq (KHz)	Mode	Resolution	V.freq (Hz)
25.175	31.469	IBM VGA 10h	640 * 350	70.087
28.322	31.469	IBM VGA 3h	720 * 400	70.087
25.175	31.469	IBM VGA 12h	640 * 480	59.940
30.240	35.000	MACINTOSH	640 * 480	66.667
31.500	37.861	VESA	640 * 480	72.809
31.500	37.500	VESA	640 * 480	75.000
36.000	35.156	VESA	800 * 600	56.250
40.000	37.879	VESA	800 * 600	60.317
50.000	48.077	VESA	800 * 600	72.188
49.500	46.875	VESA	800 * 600	75.000
57.300	49.700	MACINTOSH	832 * 624	75.000
65.000	48.363	VESA	1024 * 768	60.004
75.000	56.476	VESA	1024 * 768	70.069
78.750	60.023	VESA	1024 * 768	75.029

2.3 TV input signal Channel and pattern
2.3.1 Table 1 for NAFTA version
Signal Distribution Table (NTSC Cable)

PRG	CH	Frequency Carriers		TV System	Pattern
		Video	Sound		
1	A 03	61.25MHz	65.75MHz	NTSC M	Color Circle
2	A 06	83.25MHz	87.75MHz	NTSC M	Red Raster
3	A 09	187.25MHz	191.75MHz	NTSC M	Circle Pattern
4	A 11	199.25MHz	203.75MHz	NTSC M	Cross Hatch
5	A 13	211.25MHz	215.75MHz	NTSC M	Two White Window
6	C 70	499.25MHz	503.75MHz	NTSC M	Checkerboard
7	A 52	699.25MHz	703.75MHz	NTSC M	Color Bar
8	A 69	801.25MHz	805.75MHz	NTSC M	100% White

Table 1

Electrical instructions

2.3.2 Table2 for Europe and AP-multi

Signal Distribution Table (PAL Cable)

PRG	CH	Frequency Carriers		TV System	Pattern
		Video	Sound		
0					
1	AU37	590.25MHz	595.75MHz	PAL B(UK)	Pure White
2	AU2	64.25MHz	69.75MHz	PAL B(UK)	Circle Pattern
3	E7	189.25MHz	194.75MHz	PAL B (CCIR)	Circle Pattern
4	G47	679.25MHz	684.75MHz	PAL G (CCIR)	Circle Pattern
5	I23	487.25MHz	493.75MHz	PAL I (UK)	Circle Pattern
6	E12	224.25MHz	229.75MHz	PAL B (CCIR)	Color Bar
7	AU7	182.25MHz	187.75MHz	PAL B (UK)	Color Bar
8	G68	847.25MHz	852.75MHz	PAL G (CCIR)	100% White
9	AU9	196.25MHz	201.75MHz	PAL B (UK)	Checkerboard
10	AU10	209.25 MHz	214.75 MHz	PAL B (UK)	Crosshatch
11	AU0	46.25MHz	51.75MHz	PAL B (UK)	Color Bar
12	AU2	64.25MHz	69.75MHz	PAL B (UK)	Color Bar
13	AU5	102.25 MHz	107.75 MHz	PAL B (UK)	Crosshatch
14	AU5A	138.25MHz	143.75MHz	PAL B (UK)	Color Bar
15	AU7	182.25MHz	187.75MHz	PAL B (UK)	Pure White
16	AU9	196.25MHz	201.75MHz	PAL B (UK)	Pure White
17	AU10	209.25MHz	214.75MHz	PAL B (UK)	Circle Pattern
18	I23	487.25MHz	493.75MHz	PAL I (UK)	Circle Pattern
19	G28	527.25MHz	532.75MHz	PAL G (CCIR)	Circle Pattern
20	AU37	590.25MHz	595.75MHz	PAL G (UK)	Circle Pattern
21	I40	623.25MHz	629.75MHz	PAL I (UK)	Color Bar
22	CH44	655.25MHz	661.75MHz	PAL DK (UK)	Color Bar
23	I60	783.25MHz	789.75MHz	PAL I (UK)	100% White
24	I66	831.25MHz	837.75MHz	PAL I (UK)	Checkerboard
25	K21	471.25 MHz	477.75 MHz	SEC K1 (CCIR)	Crosshatch
28	G28	527.25MHz	532.75MHz	PAL G (UK)	Color Bar

Table 2

3.AC adaptor

3.1Setup the AC I/P at 90VAC, and Output DC loading at 4.5 Amp, The DC output voltage is 12.1 V DC

3.2 Adjustment is nothing to do

4.PC mode Display Adjustment

4.1Display quality adjustment

Use timing mode as describe in 2.2, and use the POPO (pixel on pixel off) pattern to adjust the clock until no stripe and adjust the phase until clear picture.

Check all pre-setting 140 modes.

4.2 WHITE-D adjustment (B)

4.2.1At factory mode apply 60KHz/75Hz mode with crosshatch pattern .

Set main controls brightness control at 100% and contrast to 50% .Set auto-sub function for auto offset and sub-con setup

4.2.2Apply white pattern, set brightness control at 100%, and contrast control at 50%.Preset R,G,B gain at 127.

Adjust the R,G,B gain of Scalar in Factory Mode. (see Fig 1.)

The 1931 CIE chromaticity (X, Y) co-ordinates shall be :

	9300K	6500K
x (center)	0.281 0.005	0.312 0.005
y (center)	0.311 0.005	0.338 0.005

Use Minolta CA-110 for color coordinates and luminance Check.

Luminance> 250 Nits (CPT) in the center of the screen at Original color and PC Brightness control ;Contrast control at 100%

Note : After white-D adjustment set brightness and contrast at 50%

4.3 Check the digital interface cable

Check the 64 grey level color poor & noise condition.

!5.0 TV Mode display adjust

!5.1.1Geometry Adjustment (B)

!

A)INPUT REQUIREMENTS

Equipment :PM5515, PM5518 or FLUKE 54200

Input Signal Type :1.1 for RF input signal within PAL system (for Europe and AP version) , channel : E7 (189.25MHz)the pattern is using circle and cross hatch pattern

2. for S- Video input signal , within NTSC system (for Europe and AP version) , the pattern is using Circle and cross hatch pattern

input Signal Strength :>= 1mV rms (60 dBuV) terminal Voltage.

1Vpp Y-signal , 300mVpp C-signal

Input Injection Point :Aerial input and S- Video input

B) ALIGNMENT METHOD

Initial Set-up : Set smart picture to Natural.

Method of Alignments : a. select to TV channel , then adjust vertical shift .and horizontal shift to picture center then save .

b. select to S-video Adjust vertical shift .and horizontal shift to picture center then save .

5.1.2 White balance adjustment (B)

A)GENERAL SET-UP

Equipment Requirements : Colour analyzer.

B)INPUT REQUIREMENTS

Input Signal Type : RF signal, modulated with white Pattern

Input Signal Strength : >= 1mV rms (60 dBuV) terminal voltage.

Input Injection Point : Aerial input

C)ALIGNMENT METHOD

Initial Set-up : After PC White D adjust
Set color to original color
Set TV Brightness = 122 ; Contrast=64 in Factory mode(can be fine tuned)
Set smart picture to Natural (Europe , AP model)
Set Color Temp to Normal
Select COLOR TEMP or 100% Full White pattern by TV pattern generator

Method of Alignments :
Adjust TV R,G,B gain
Adjust TV red , green and blue to the value in the table
Check the grey level color pool & noise condition if need adjust, please adjust TV Brightness and Contrast in Factory mode. .

D)EXPECTED RESULTS

Measured Parameters : White balance.
Specifications : See table.
Units of Measurement : xy.

E)TABLE(S) : Specifications of white balance

Picture Mode	x	y	Brightness
Normal (Natural)	295+/- 5	315+/- 5	>230 nits

Table 5.1: Readings with Philips Colour Meter.

5.2 VIDEO PROCESSING (Conjunction board A10 alignment)

5.2.1 RF AGC take over point adjustment .

Input :Test land of item 7681 pin 11 connector through the probe.
Input signal:IF signal modulated with a Grey scale video signal , video modulation - negative & Sound IF signal (33.4MHz / 31.5MHz / 41.25MHz for picture IF frequencies of 38.9 MHz / 38MHz / 45.75MHz respectively) ,level at 13dB w.r.t. picture IF level, Without modulation (only carrier).

Input Probe : Input via 50 coaxial cable terminated withRC (120.10nF) network at I/P injection point.
Output : pin 1 of tuner connected to a DC voltmeter.
Set bimos : sub address 27, refer to table below.

Method :
Via I^2C or with a factory remote control, adjust the AGC take over (data byte sub address 1E , D0-D5) to the step at which the DC. voltage should be within 2.5 V AGC takeover voltage 4.6 V. Record the AGC register content and store in the NVROM location ' TOP ' , address as specified in the attached 'memory layout' list.

Versions	IF Frequency (MHz)	IF signal level (dBuV)	Value of Sub address 27 of bimos
Europe model	38.9	105	40hex

5.2.2 Off-set IF demodulator Adjustment.

Input : Same as RF AGC adjustment.

Input Signal : Same as RF AGC adjustment , with picture IF signal modulated with a cross-hatch video signal instead of grey scale video signal & video level 105% .

Output : Sound decoder (device add. 80H / 81H for Write/Read) Read register Quasi-peak readout left ; Sub Add. 13H ; Reg. 0019H.

Set Sound decoder : 1. DSP write register : Prescale FM\AM ; Sub Add.12H ; Reg. 000EH ; Data 7F00H.
2. DSP write register : Deemphasis FM ; Sub Add.12H ; Reg. 000FH ; Data 3F00H.
3. DSP write register : Volume loudspeaker channel ; Sub Add.12H ; Reg. 0000H ; Data 7F00H.

Method : Via I2C, adjust the ' Off-set IF demodulator ' (data byte sub address 05, D0-D5) register value of the bimos so as to get the lowest read back value from the sound decoder.

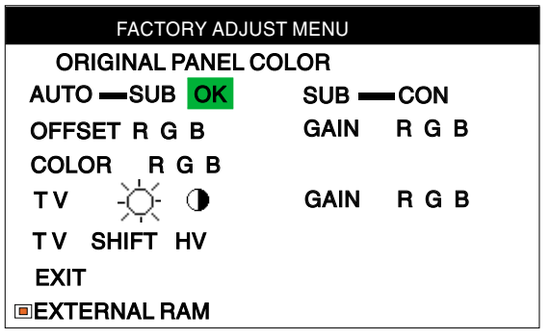
This value of the ' Off-set IF demodulator ' is to be stored in the NVROM locations ' OFFSET_IF_NEG ' & ' OFFSET_IF_POS ' , address as specified in the attached ' memory layout ' list.

Factory Adjustment

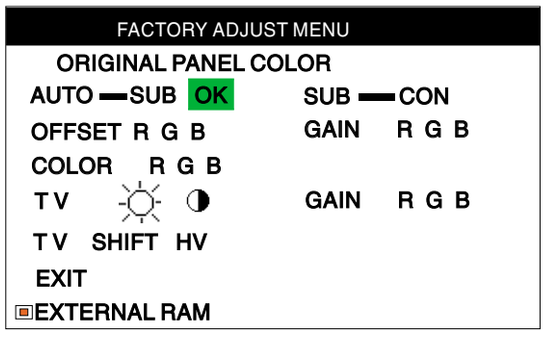
Factory Mode Adjustment

Entering Factory Adjustment Menu
Push **OK** & AUTO buttons then power on the monitor, release them after picture display normally. Press **OK** button to bring up OSD menu of factory mode as shown below.

Use ▼ button to select factory adjustment indication (for example: LCD TV V1.28 20011030, which is the entrance of the factory adjustment menu, press **OK** button to access it. The window shows as below.



Use ▲ or ▼ buttons to select SUB-CON, COLOR ,R G B,..etc.
Use + − or + − buttons to decrease/increase the value of each item
AUTO : adjust Sub-brightness & Sub-contrast automatically.



◑ Contrast adjustment (Sub-Contrast). Use this menu item to adjust the contrast gain of pre-amp ranges from 0 to 255.

GAIN R G B
COLOR R G B
Color temperature gain adjustment. Use these menu items to adjust the RGB gains of pre-amp for different color temperatures, ranges from 0 to 255.

OFFSET R G B
Sub-Brightness adjustment. Use this menu item to adjust the brightness level (DC-level) of pre-amp range from 0 to 255.

(PS: The Offset R G B f unction can be used on reduce or eliminate snowy noise on the background when the resolution of video signal is 1024 X 768 vertical 60Hz. Slightly increase or decrease the value until snowy noise completely disappear.)

Safety Test Requirements

All units that are returned for service or repair must pass the original manufactures safety tests. Safety testing requires both *Hipot* and *Ground Continuity* testing.

HI-POT TEST INSTRUCTION

1. Application requirements

1.1 All mains operated products must pass the Hi-Pot test as described in this instruction.

1.2 This test must be performed again after the covers have been refitted following the repair, inspection or modification of the product.

2. Test method

2.1 Connecting conditions

2.1.1 The test specified must be applied between the parallel-blade plug of the mainscord and all accessible metal parts of the product.

2.1.2 Before carrying out the test, reliable conductive connections must be ensured and thereafter be maintained throughout the test period.

2.1.3 The mains switch(es) must be in the "ON" position.

2.2 Test Requirements

All products should be HiPot and Ground Continuity tested as follows:

Condition	HiPot Test for products where the mains input range is Full range(or 220V AC)	HiPot Test for products where the mains input is 110V AC(USA type)	Ground Continuity Test requirement
Test voltage	2820VDC (2000VAC)	1700VDC (1200VAC)	Test current: 25A,AC Test time: 3 seconds(min.) Resistance required: <=0.09+R ohm, R is the resistance of the mains cord.
Test time (min.)	3 seconds	1 second	
Trip current (Tester)	set at 100 uA for Max. limitation; set at 0.1 uA for Min. limitation	5 mA	
Ramp time	set at 2 seconds		

2.2.1 The test with AC voltage is only for production purpose, **Service center shall use DC voltage.**

2.2.2 The minimum test duration for Quality Control Inspector must be 1 minute. No breakdown during the test.

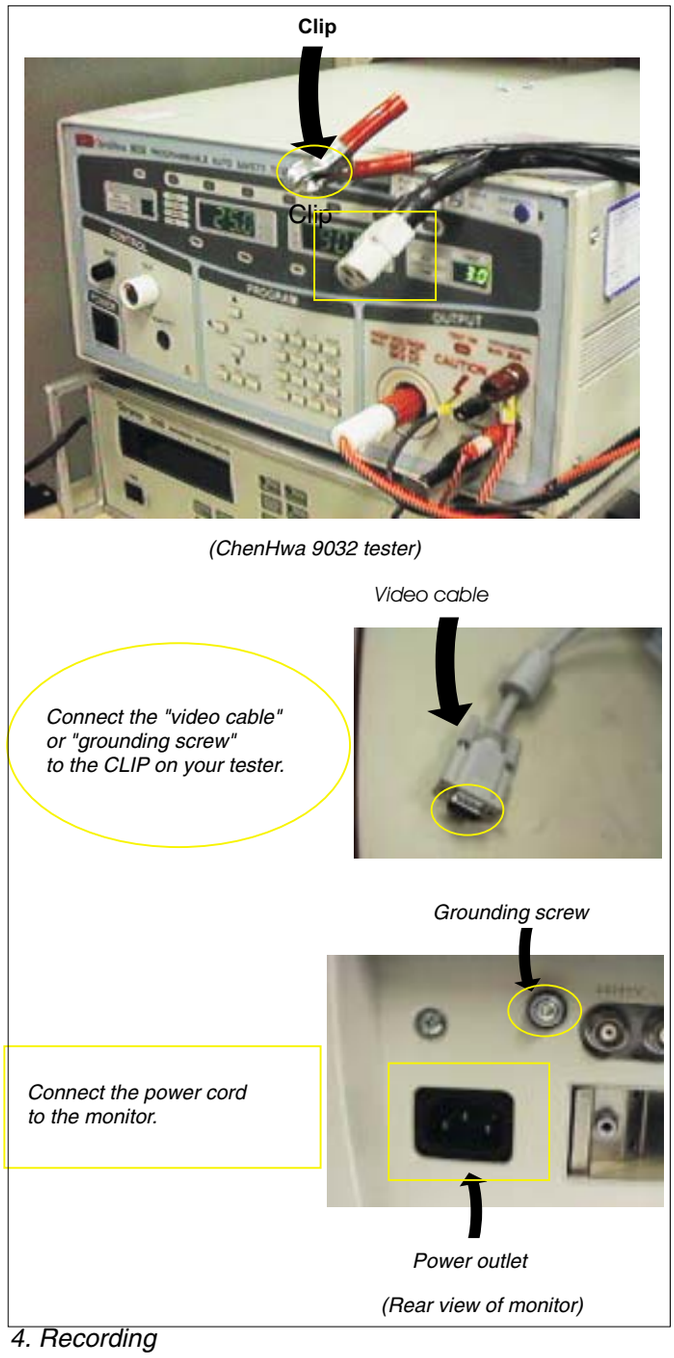
2.2.3 The test voltage must be maintained within the specified voltage + 5%.

2.2.4 The grounding blade or pin of mains plug must be conducted with accessible metal parts.

3. Equipments and Connection

3.1. Equipments
For example :
- ChenHwa 9032 PROGRAMMABLE AUTO SAFETY TESTER
- ChenHwa 510B Digital Grounding Continuity Tester
- ChenHwa 901 (AC Hi-pot test), 902 (AC, DC Hi-pot test) Withstanding Tester

3.2. Connection
* Turn on the power switch of monitor before Hipot and Ground Continuity testing.



4. Recording

Hipot and Ground Continuity testing records have to be kept for a period of 10 years.

DDC Instructions

General

DDC Data Re-programming
In case the DDC data memory IC or main EEPROM which storage all factory settings were replaced due to a defect, the serial numbers have to be re-programmed.
It is advised to re-soldered DDC IC and main EEPROM from the old board onto the new board if circuit board have been replaced, in this case the DDC data does not need to be re-programmed.

Additional information
Additional information about DDC (Display Data Channel) may be obtained from Video Electronics Standards Association (VESA). Extended Display Identification Data(EDID) information may be also obtained from VESA.

DDC EDID structure
For Analog interface: Standard Version 3.0
Structure Version 1.2
For Digital inferface: Standard Version 3.0
Structure Version 1.3

System and equipment requirements

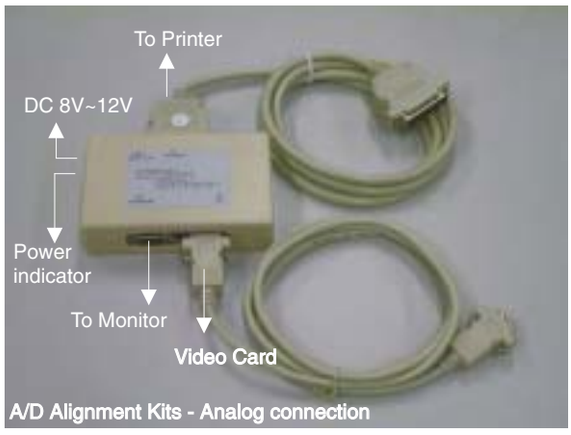
1. An i486 (or above) personal computer or compatible.
2. Microsoft operation system Windows 95/98.
3. EDID301.EXE program (3138 106 10103) as shown in Fig. 1
4. A/D Alignment kits (3138 106 10079):
   inclusion : a. Alignment box x1 (as Fig. 2)
   b. Printer cable x1
   c. (D-Sub) to (D-Sub) cable x1

Note: The EDID301.EXE (Release Version 1.58 20000818)is a windows-based program, which cannot be run in MS-DOS.

Diskette with EDID301.EXE

Fig. 1

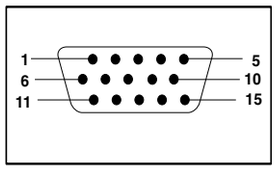
Fig. 2



A/D Alignment Kits - Analog connection

Note: The alignment box has already build-in a batteries socket for using batteries (9V) as power source. Pull out the socket by remove four screws at the rear of box. Please do not forget that remove batteries after programming. The energy of batteries can only drive circuits for a short period of time.

Pin assignment



Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	+5V
2	Green video input	10	Ground
3	Blue video input	11	Ground
4	Ground	12	Serial data line(SDA)
5	No Connected	13	H.Sync
6	Red video ground	14	V.Sync(VCLK for DDC)
7	Green video ground	15	Data clock line(SCL)
8	Blue video ground		

Configuration and procedure

There are 2 chips contained OSD string, serial number..etc on the circuit board,
main EEPROM (7402, 32k) which storage all factory settings, OSD string.DDC IC (7202) which storage 128byte EDID data (serial number ..etc.). Following descirptions are the connection and procedure for Analog DDC application, the main EEPROM can be re-programmed along with Analog IC by enable factory memory data write function on the DDC program (EDID301.EXE).

Initialize alignment box

In order to avoid that monitor entering power saving mode due to sync will cut off by alignment box, it is necessary to initialize alignment box before running programming software (EDID301.EXE). Following steps show you the procedures and connection.

Step 1: Supply 8~12V DC power source to the Alignment box by plugging a DC power cord or using batteries.
Step 2: Connecting printer cable and video cable of monitor as Fig. 3

Rear view of150MT10P

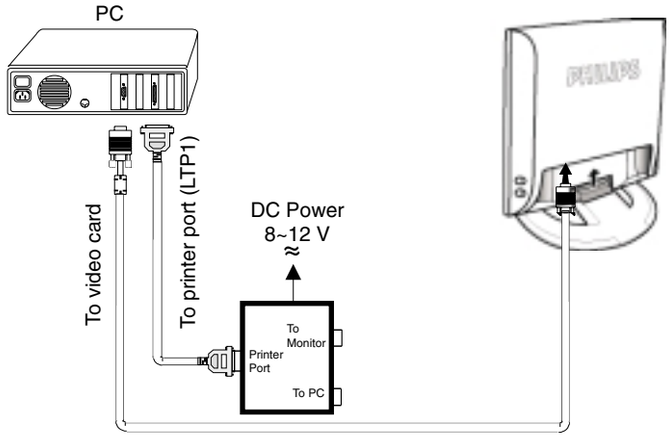


Fig. 3

Step 3: Installation of EDID301.EXE

Method 1: Start on DDC program

Start Microsoft Windows.
1. Insert the disk containing EDID301.EXE program into floppy disk drive.
2. Click Start, choose Run at start menu of Windows 95/98 as shown in Fig. 4.

Fig. 4

3. At the submenu, type the letter of your computer's floppy disk drive followed by :EDID301 (for example, A:\EDID301, as shown in Fig. 5).

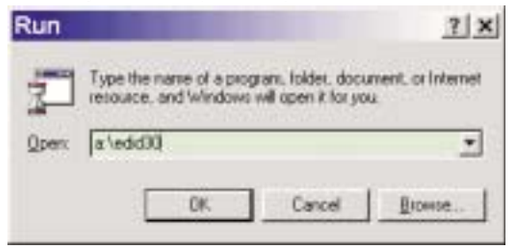


Fig. 5

4. Click **OK** button. The main menu appears (as shown in Fig. 6).
This is for initialize alignment box.

Fig. 6

Note 1: If the connection is improper, you will see the following error message (as shown in Fig. 7) before entering the main menu. Meanwhile, the (read EDID) function will be disable. At this time, please make sure all cables are connected correctly and fixedly, and the procedure has been performed properly.

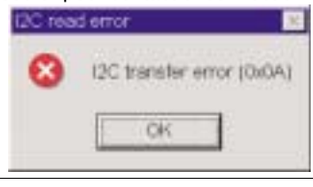
Fig. 7

Method 2: After create a shortcut of EDID301.EXE
: Double click EDID301 icon (as shown in Fig. 8) which is on the screen of Windows Wallpaper.
Bring up main menu of EDID301 as shown in Fig. 9.
This is for initialize alignment box.

Fig. 8

Fig. 9

Note 2: During the loading, EDID301 will verify the EDID data which just loaded from monitor before proceed any further function, once the data structure of EDID can not be recognized, the following error message will appear on the screen as below. Please confirm following steps to avoid this message.
1. The data structure of EDID was incorrect.
2. DDC IC that you are trying to load data is empty.
3. Wrong communication channel has set at configuration setup windows.
4. Cables loosed or poor contact of connection.



DDC Instructions (Continued)

Re-programming Analog DDC IC

Step 1: After initialize alignment box, connecting all cables and box as shown in Fig. 10

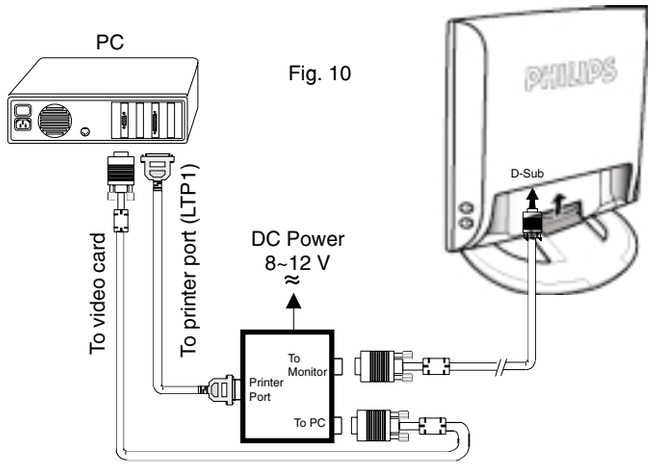


Fig. 10

Step 2: Read DDC data from monitor

1. Click icon as shown in Fig. 11 from the tool bar to bring up the Channels "Configuration Setup" windows as shown in Fig. 12.

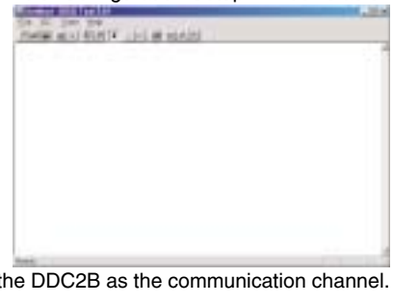


Fig. 11

2. Select the DDC2B as the communication channel. Select "**Enable**" & fill out "**F0**" for Mapped EDID page address as shown in Fig. 12.

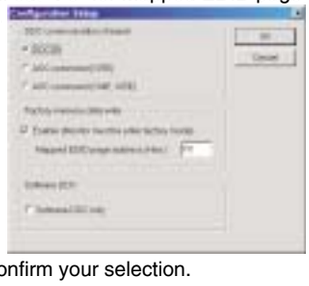
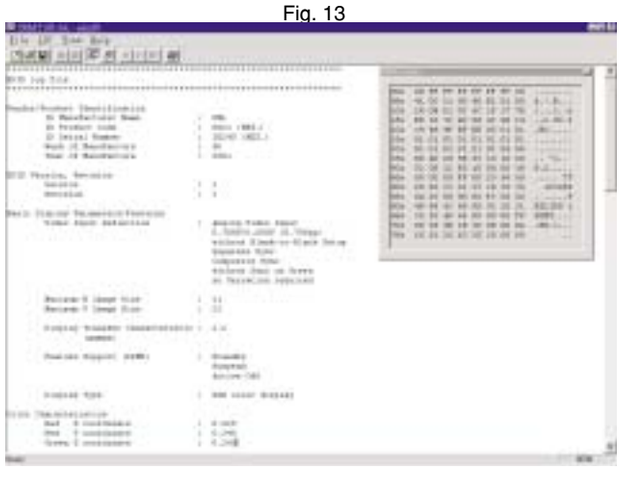


Fig. 12

3. Click OK button to confirm your selection.

4. Click icon (Read EDID function) to read DDC EDID data from monitor. The EDID codes will display on screen as shown in Fig. 13.

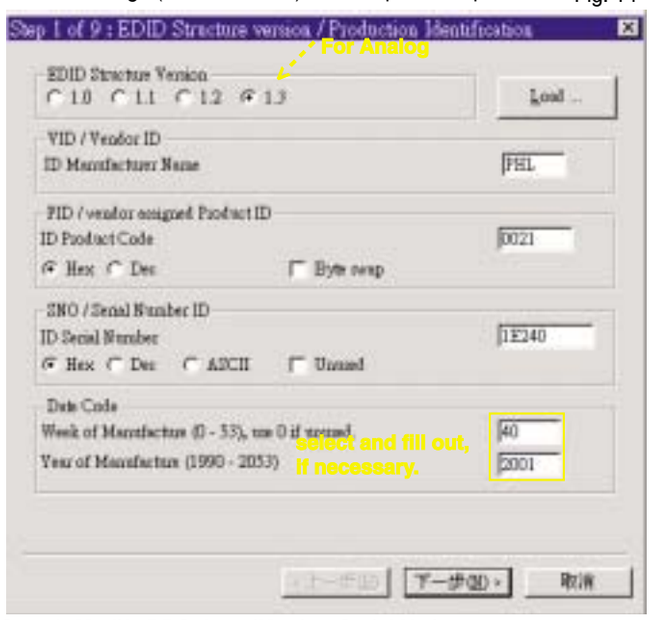
Fig. 13



Step 3: Modify DDC data (verify EDID version, week, year)

1. Click (new function) icon from the tool bar, bring up Step 1 of 9 as shown in Fig. 14 . EDID30 DDC application provides the function selection and text change (select & fill out) from Step 1 to Step 9.

Fig. 14



Step 4: Modify DDC data (Monitor Serial No.)

1. Click **Next** , bring up Fig. 15.

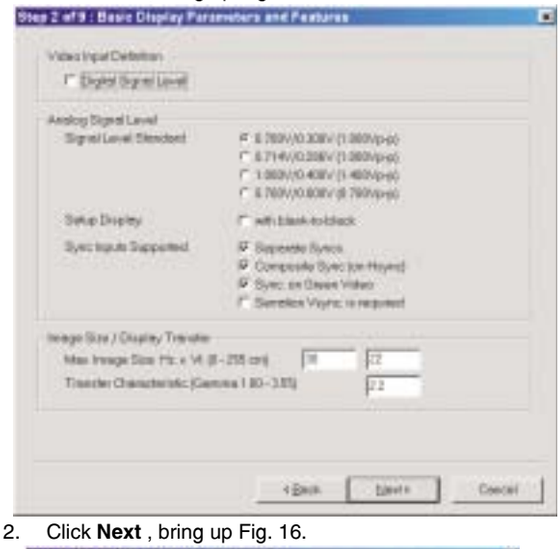


Fig. 15

2. Click **Next** , bring up Fig. 16.

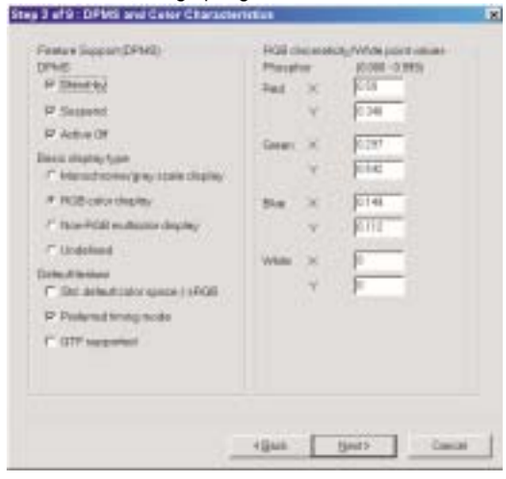


Fig. 16

DDC Instructions (Continued)

3. Click **Next** , bring up Fig. 17.

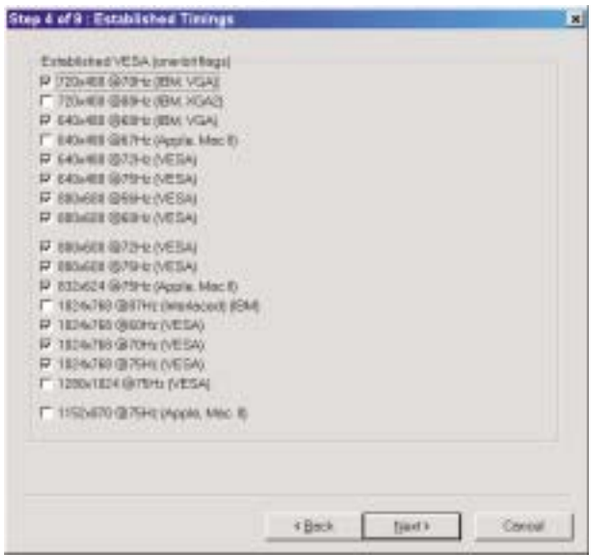


Fig. 17

4. Click **Next** , bring up Fig. 18.

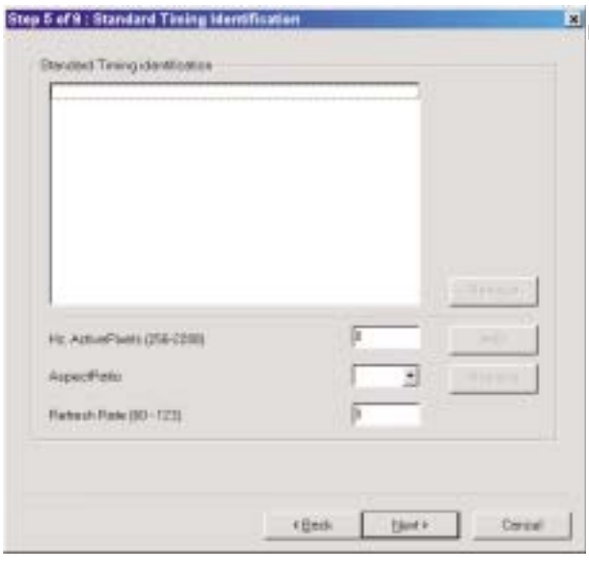


Fig. 18

5. Click **Next** , bring up Fig. 19.

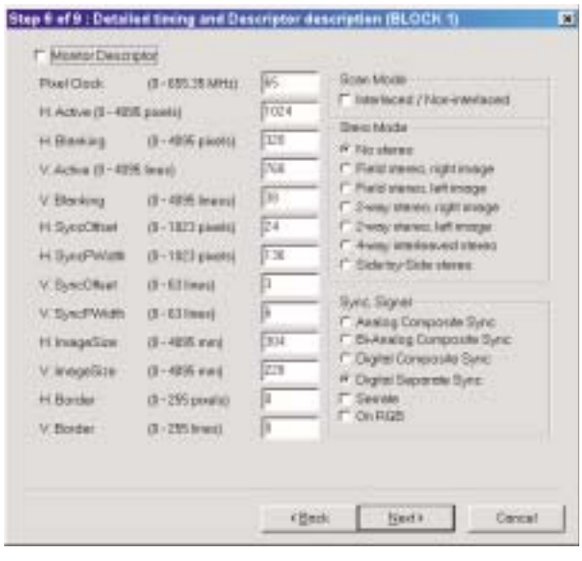


Fig. 19

6. Click **Next** , bring up Fig. 20.

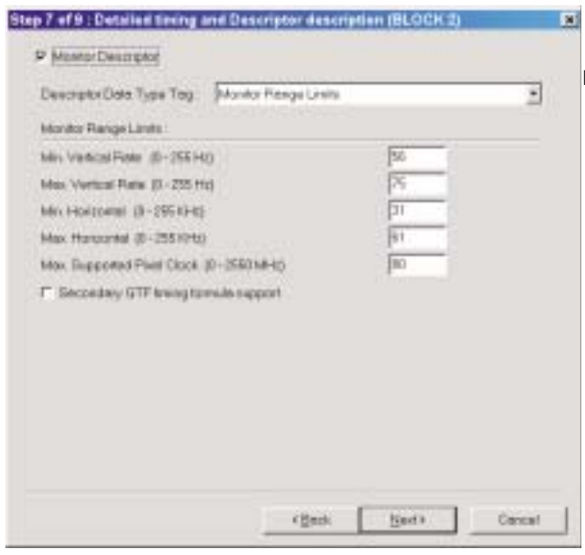

Step 7 of 9 : Detailed timing and Descriptor description (BLOCK 2)
Monitor Descriptor
Descriptor Data Type Tag:
Monitor Range Limits
Min. Vertical Rate (0 - 255 Hz)
Max. Vertical Rate (0 - 255 Hz)
Min. Horizontal (0 - 255 KHz)
Max. Horizontal (0 - 255 KHz)
Max. Supported Pixel Clock (0 - 2550 MHz)
Secondary GTF timing formula support
< Back
Next >
Cancel

Fig. 20

7. Click **Next** , bring up Fig. 21.

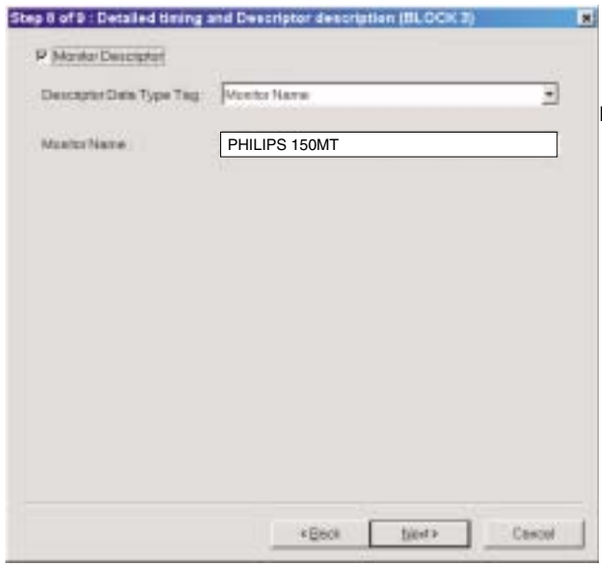


Fig. 21

8. Click **Next** , bring up Fig. 22.
   - Fill out serial number.
   - Click **Finish** to exit the Step window.

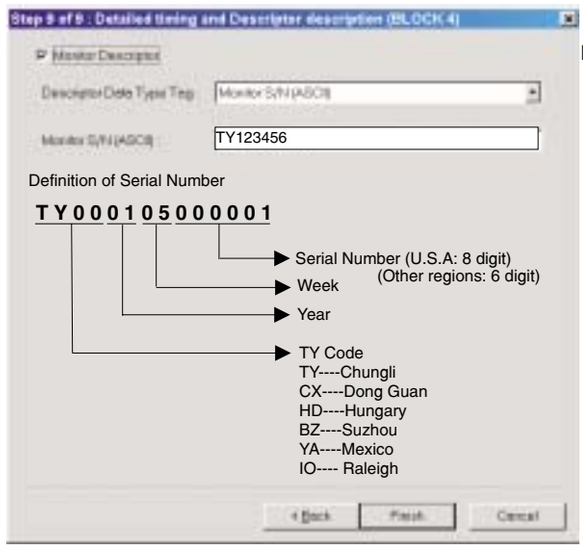


Fig. 22

DDC Instructions (Continued)

Go to cover page

Step 5: Access Factory Mode for DDC data writing

Factory Mode:
How to Get into Factory Mode Menu

Push Menu " **OK** " & " **ATUO** " & " ⏻ " buttons simultaneously untill picture comes on the screen.
Press Menu " **OK** " button, bring up Factory mode indication as shown in Fig 23 .

<== Factory Mode

Fig. 23

Step 6: Write DDC data

1. Click (Write EDID) icon from the tool bar to write DDC data. (0% ~ 100%, -> READY)
2. Click (Read EDID) to re-confirm it.

Step 7: Reconfirm Monitor Serial Number in User Mode

1. Go back to USER Mode as shown in Fig. 24 :
Turn off monitor, then turn on monitor again => leave factory mode and return to User Mode directly.

User Mode Fig. 24

2. Select "Product information" => Press "OK" button
=> Bring up Fig. 25.

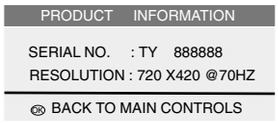


Fig. 25

3. To match with the serial number modification on EEprom(OSD)
See page 116~117.

Step 8: Save DDC data
Sometimes, you may need to save DDC data as a text file for using in other IC chip. To save DDC data, follow the steps below:

1. Click (Save) icon (or click "file"-> "save as") from the tool bar and give a file name as shown in Fig. 26.
The file type is EDID30 file (*.ddc) which can be open in WordPad. By using WordPad, the texts of DDC data & table (128 bytes, hex code) can be modified. If DDC TEXTS & HEX Table are completely correct, it can be saved as .ddc flie to re-load it into DDC IC & EEPROM for DDC Data application.

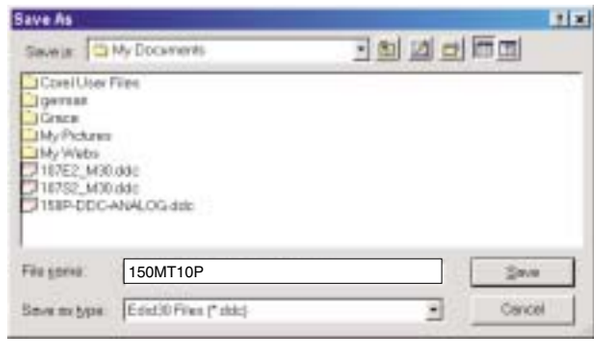


Fig. 26

2. Click Save.

Step 9: Load DDC data

1. Click from the tool bar.
2. Select the file you want to open as shown in Fig. 27.
3. Click Open.

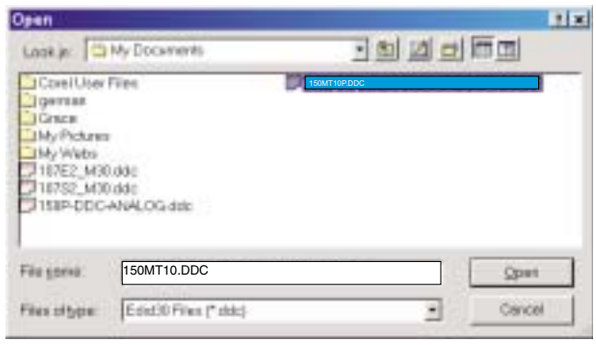


Fig. 27

Step 9: Exit DDC program

Pull down the File menu and select Exit as shown in Fig. 28.

Fig. 28

DDC data of Analog

THE DISPLAY DATA CHANNEL (DDC 2B) CONTENT
(FOR 150MT10P/00C LCD Monitor / TV)

****

EDID log file

****

Vendor/Product Identification
- ID Manufacturer Name : PHL
- ID Product Code : 0021 (HEX.)
- ID Serial Number : 1E240 (HEX.)
- Week of Manufacture : 40
- Year of Manufacture : 2001

EDID Version, Revision
- Version : 1
- Revision : 3

Basic Display Parameters/Features
- Video Input Definition : Analog Video Input
  0.700V/0.000V (0.70Vpp)
  without Blank-to-Black Setup
  Separate Sync
  Composite Sync
  without Sync on Green
  no Serration required
- Maximum H Image Size : 31
- Maximum V Image Size : 23
- Display Transfer Characteristic : 2.2 (Gamma)
- Feature Support (DPMS): Standby
  Suspend
  Active Off
- Display Type : RGB color display

Color Characteristics
- Red X coordinate : 0.625
- Red Y coordinate : 0.345
- Green X coordinate : 0.265
- Green Y coordinate : 0.595
- Blue X coordinate : 0.142
- Blue Y coordinate : 0.081
- White X coordinate : 0.281
- White Y coordinate : 0.311

Established Timings
- Established Timings : 720 x 400 @70Hz (IBM,VGA)
  640 x 480 @60Hz (IBM,VGA)
  640 x 480 @67Hz (Apple,Mac II)
  640 x 480 @72Hz (VESA)
  640 x 480 @75Hz (VESA)
  800 x 600 @56Hz (VESA)
  800 x 600 @60Hz (VESA)
- Established Timings II : 800 x 600 @72Hz (VESA)
  800 x 600 @75Hz (VESA)
  832 x 624 @75Hz (Apple,Mac II)
  1024 x 768 @60Hz (VESA)
  1024 x 768 @70Hz (VESA)
  1024 x 768 @75Hz (VESA)
- Manufacturer's timings :
- Standard Timing Identification : Unused

Detailed Timing #1
- Pixel Clock (MHz) : 25.18
- H Active (pixels) : 640
- H Blanking (pixels) : 160
- V Active (lines) : 350
- V Blanking (lines) : 99
- H Sync Offset (F Porch) (pixels): 16
- H Sync Pulse Width (pixels) : 96
- V Sync Offset (F Porch) (lines) : 37
- V Sync Pulse Width (lines): 2
- H Image Size (mm) : 306
- V Image Size (mm) : 230
- H Border (pixels) : 0
- V Border (lines) : 0
- Flags : Non-interlaced
  : Normal Display, No stereo
  : Digital Separate sync.
  : Negative Vertical Sync.
  : Negative Horizontal Sync.

Monitor Descriptor #2
- Serial Number : TY 123456

Monitor Descriptor #3
- Monitor Name : PHILIPS 150MT

Monitor Descriptor #4
Monitor Range Limits
- Min. Vt rate Hz : 56
- Max. Vt rate Hz : 75
- Min. Horiz. rate kHz : 30
- Max. Horiz. rate kHz : 61
- Max. Supported Pixel : 80

No secondary GTF timing formula supported.

- Extension Flag : 0
- Check sum : D0 (HEX.)

****

EDID data (128 bytes)

****

0: 00 1: ff 2: ff 3: ff 4: ff 5: ff 6: ff 7: 00
8: 41 9: 0c 10: 21 11: 00 12: 40 13: e2 14: 01 15: 00
16: 28 17: 0b 18: 01 19: 03 20: 6c 21: 1f 22: 17 23: 78
24: e8 25: 1d 26: 72 27: a0 28: 58 29: 43 30: 98 31: 24
32: 14 33: 48 34: 4f 35: bf 36: ee 37: 00 38: 01 39: 01
40: 01 41: 01 42: 01 43: 01 44: 01 45: 01 46: 01 47: 01
48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: d6 55: 09
56: 80 57: a0 58: 20 59: 5e 60: 63 61: 10 62: 10 63: 60
64: 52 65: 08 66: 32 67: e6 68: 10 69: 00 70: 00 71: 18
72: 00 73: 00 74: 00 75: ff 76: 00 77: 20 78: 54 79: 59
80: 20 81: 20 82: 31 83: 32 84: 33 85: 34 86: 35 87: 36
88: 0a 89: 20 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
96: 48 97: 49 98: 4c 99: 49 100: 50 101: 53 102: 20 103: 31
104: 35 105: 30 106: 4d 107: 54 108: 00 109: 00 110: 00 111: fd
112: 00 113: 38 114: 4b 115: 1e 116: 3d 117: 08 118: 00 119: 0a
120: 20 121: 20 122: 20 123: 20 124: 20 125: 20 126: 00 127: d0

**Note1: Address 78&79 is Factory code

Repair Tips

0. Warning

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the unit via a wrist wrap with resistance. Keep components and tools also at the same potential !

1. Servicing of SMDs (Surface Mounted Devices)

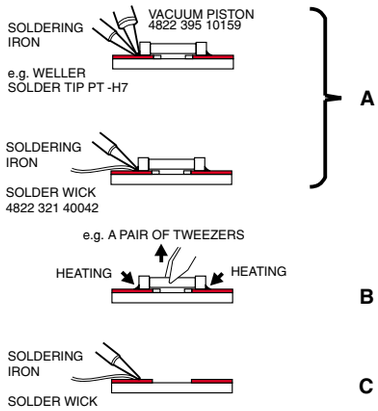
1.1 General cautions on handling and storage

- Oxidation on the terminals of SMDs results in poor soldering. Do not handle SMDs with bare hands.
- Avoid using storage places that are sensitive to oxidation such as places with sulphur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity. The capacitance or resistance value of the SMDs may be affected by this.
- Rough handling of circuit boards containing SMDs may cause damage to the components as well as the circuit boards. Circuit boards containing SMDs should never be bent or flexed. Different circuit board materials expand and contract at different rates when heated or cooled and the components and/or solder connections may be damaged due to the stress. Never rub or scrape chip components as this may cause the value of the component to change. Similarly, do not slide the circuit board across any surface.

1.2 Removal of SMDs

- Heat the solder (for 2-3 seconds) at each terminal of the chip. By means of litz wire and a slight horizontal force, small components can be removed with the soldering iron. They can also be removed with a solder sucker (see Fig. 1A)

Fig. 1 DISMOUNTING



- While holding the SMD with a pair of tweezers, take it off gently using the soldering iron's heat applied to each terminal (see Fig. 1 B).
- Remove the excess solder on the solder lands by means of litz wire or a solder sucker (see Fig. 1C).

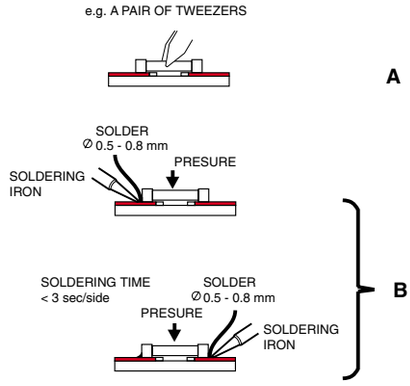
1.3 Caution on removal

- When handling the soldering.iron. use suitable pressure and be careful.
- When removing the chip, do not use undue force with the pair of tweezers.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- The chip, once removed, must never be reused.

1.4 Attachment of SMDs

- Locate the SMD on the solder lands by means of tweezers and solder the component on one side. Ensure that the component is positioned correctly on the solder lands (see Fig.2A).
- Next complete the soldering of the terminals of the component (see Fiq. 2B).

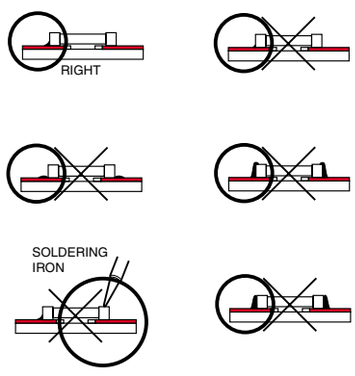
Fig. 2 MOUNTING



2. Caution when attaching SMDs

- When soldering the SMD terminals, do not touch them directly with the soldering iron. The soldering should be done as quickly as possible, care must be taken to avoid damage to the terminals of the SMDs themselves.
- Keep the SMD's body in contact with the printed board when soldering.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- Soldering should not be done outside the solder land.
- Soldering flux (of rosin) may be used, but should not be acidic.
- After soldering, let the SMD cool down gradually at room temperature.
- The quantity of solder must be proportional to the size of the solder land. If the quantity is too great, the SMD might crack or the solder lands might be torn loose from the printed board (see Fig. 3).

Fig. 3 Examples



Colour adjustment

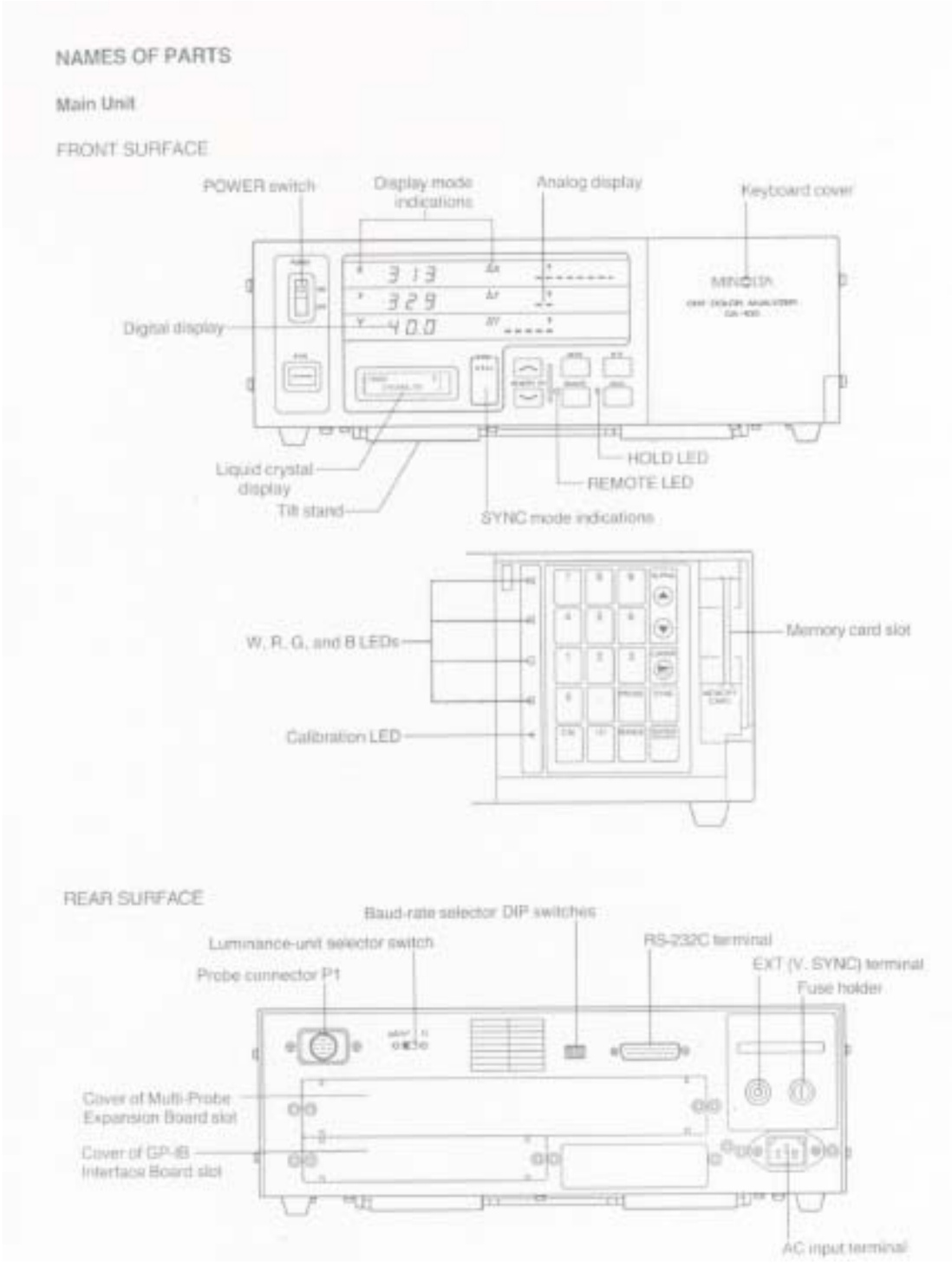
LCD COLOUR ANALYZER - CA110

1. SUMMARY

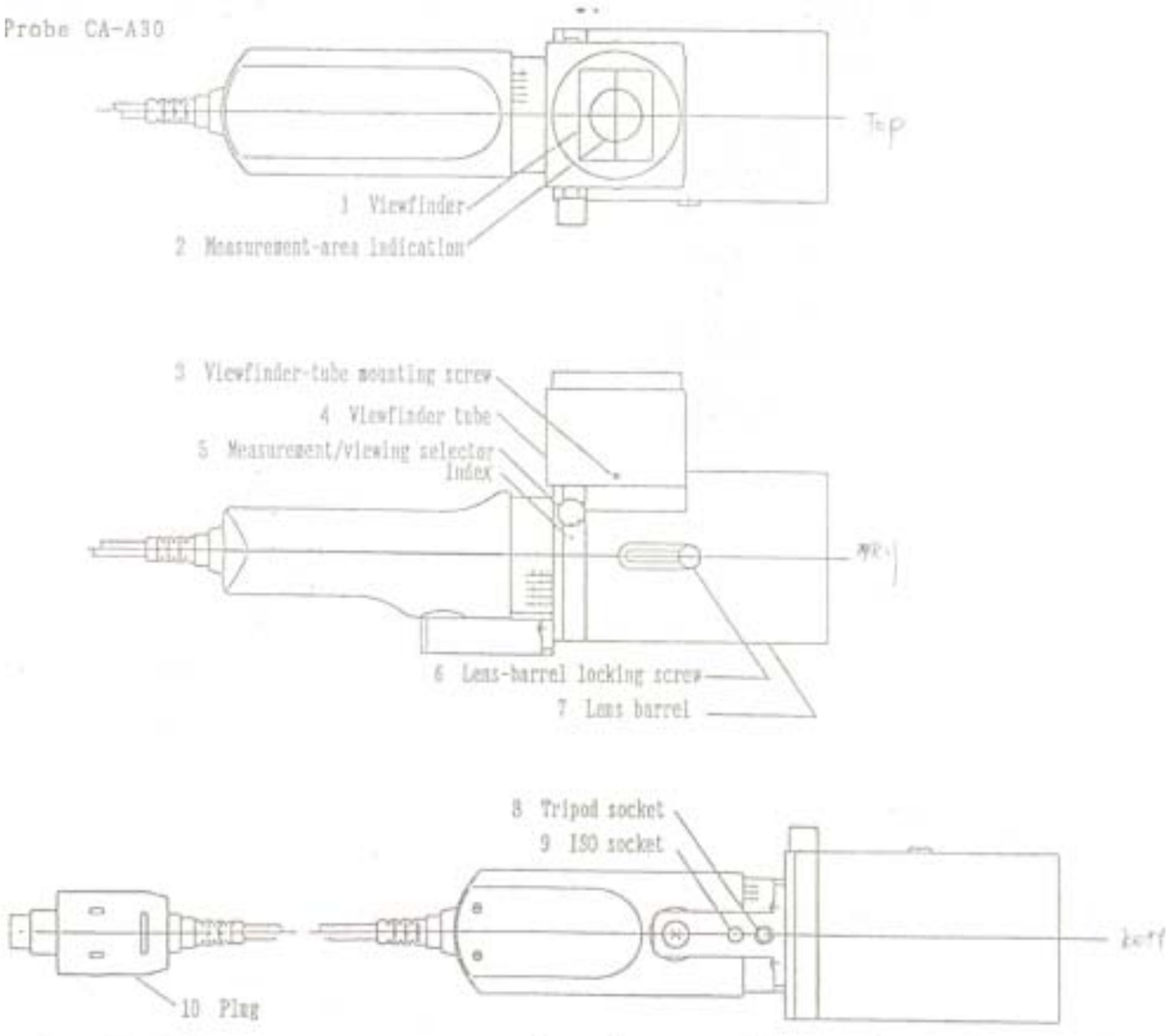
The LCD Colour Analyzer CA-110 was designed to upgrade the white-balanceprocess on production lines for colour LCD televisions and computer colour LCD panels in the colour LCD industry. The CA-110 consists of a main unit and a measuring probe.
The measuring probe utilizes an optical system suitable for measurement of colour LCDs and is equipped with a viewfinder to verify the area to be measured.

2. APPLICATIONS

* White-balance adjustment and inspection on LCD production lines.
* Quality control and shipping inspection by LCD manufacturers.
* Inspection of LCDs upon receipt by computer manufacturers.



Colour Adjustment



1.	Viewfinder	Shows image seen by measuring probe.
2.	Measurement-area indication	Indicates area to be measured.
3.	Viewfinder-tube mounting screw	Removing these two screws (one on each side) allows the viewfinder tube to be removed to clean viewfinder, etc.
4.	Viewfinder tube	Can be moved to minimize the effects of surrounding light and provide the best view of the viewfinder image.
5.	Measurement/viewing selector	Moves internal mirror; set to ○ for measurement and to ● for viewing or for zero calibration.
6.	Lens-barrel locking screw	Locks lens barrel at a fixed position.
7.	Lens barrel	Can be moved back and forth to set measurement angle.
8.	Tripod socket	Can be used to mount measurement probe on a tripod. Depth: 6mm.
9.	ISO socket	Can be used to mount measurement probe. ISO Ø5mm, depth: 6mm
10.	Plug	Used to connect measuring probe to main unit or optional Multi-Probe Expansion Board.

Colour adjustment

ZERO CALIBRATION

Zero calibration is performed to determine the output of the measuring probe when no light reaches the sensor and to set this as the zero point to which all other measurements are referenced. Zero calibration must be performed after the POWER switch has been set ON brfore taking any measurements.

To perform zero calibration :

* Before performing zero calibration, check that the measuring probe has been connected to probe connector P1.

1. Check that the POWER switch is set to ON.

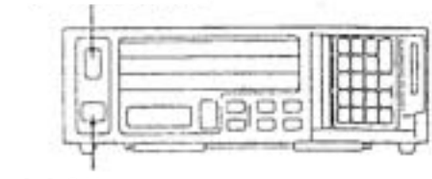
2. Set the measuring/viewing selector to the (viewing) position. (An image can be seen in the viewfinder, but no light will reach the sensor.)

3. Press 0-CAL.

   * If zero calibration is being performed immediately after the POWER switch has been set to ON, press 0-CAL after "PUSH 0-CAL KEY" appears in the liquid crystal display.

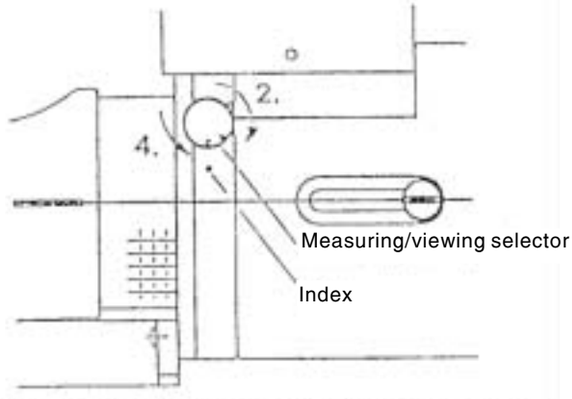
4. Set the measuring/viewing selector to the position. Measurements will be started immediately.

DARKEN PROBE	Display after POWER switch is set to ON
↓	Approximately 5 seconds
DARKEN PROBE PUSH 0-CAL KEY	
↓	
ZERO CALIBRATION	Press 0-CAL, Performing zero calibration
↓	
CH00 P1 E1 [ ]	Zero calibration completed



1. POWER switch

3. 0-CAL



- "E1" will appear in the liquid crystal display the first time the CA-110 is used after shipment because no standard color has been set.
- Zero calibration can be performed at any time, even if "PUSH 0-CAL KEY" is not shown in the liquid crystal display.

Note:

- If the luminance of the LCD to be measured is 5.00cd/m² (1.46 fL) or less, wait at least five minutes after setting POWER switch to ON before performing zero calibration. Also, when measuring LCDs of low luminance, zero calibration should be performed approximately once an hour to ensure accuracy.
- If the ambient temperature changes after zero calibration has been performed, perform zero calibration again.
- Do not press any key while zero calibration is being performed. If a key is pressed, the time required for zero calibration will become longer.

To check if zero calibration was performed correctly, place the receptor area of the probe face down on a flat surface so that no light reaches the receptor area.

If the display shown at right appears in the liquid crystal display, perform zero calibration again.

```
OFFSET ERROR
PUSH 0-CAL KEY
```

- Even when "OFFSET ERROR" appears in the liquid crystal display, if light reaches the receptor area of the measuring probe, measured values will appear in the digital and analog displays. However, these values will not be accurate.

If any other display is shown, zero calibration was performed correctly.

Colour Adjustment

SETTING MEASUREMENT AREA

Measurement areas of Ø25mm and Ø50mm can be selected by extending or retracting the lens barrel. The Ø25mm measurement area can be used for measuring LCDs with 2 - inch or greater diagonals: the ø50mm measurement area can be used for measuring LCDs with 4 - inch or greater diagonals.

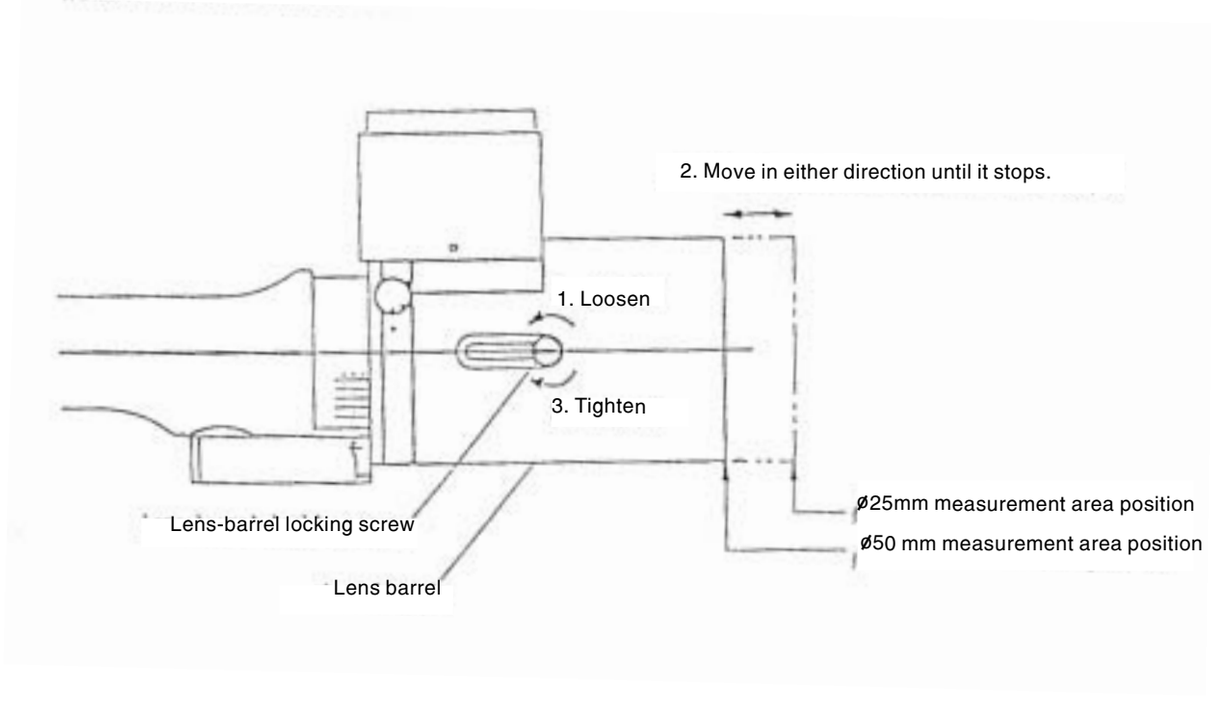
Set the measurement area :

Using a slotted screwdriver, loosen the lens - barrel locking screw.

Slide the lens barrel to the position corresponding to the desired measurement area. The lens barrel should be slid in the desired direction until it stops.
Extending the lens barrel fully sets the Ø25mm measurement area: retracting the lens barrel fully sets the Ø50mm measurement area.

Use the screwdriver to tighten the lens - barrel locking screw and lock the lens barrel in position.

Changing the measurement area also changes the measurement angle. this may result in differences between values measured with the Ø25mm measurement area and those measured with the Ø50mm measurement area to the viewing - angle characteristics of the LCD. For this reason. it is recommended that the measement area be constant for all measements.



Colour adjustment

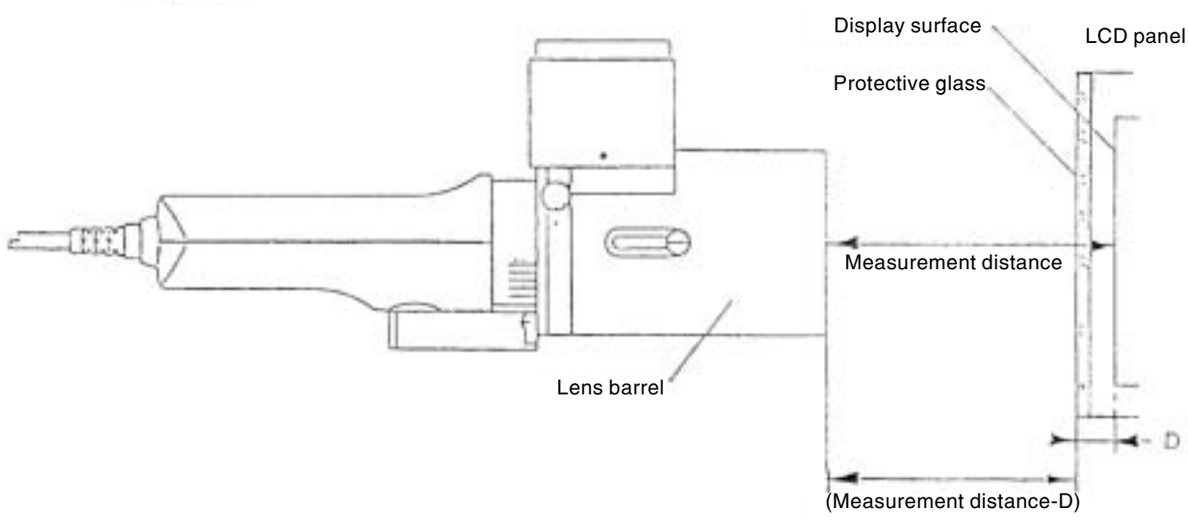
SETTING MEASUREMENT DISTANCE

The measurement distance (the distance from the front of the measuring probe's lens barrel to the display surface of the LCD) should be set using a ruler according to the procedure below.

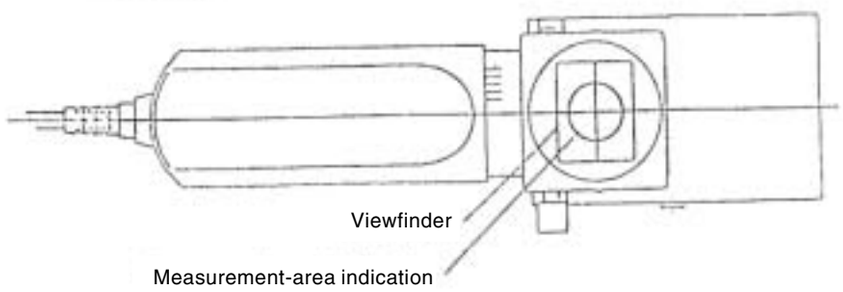
1. Mount the measuring probe on a tripod or other stand and mount the LCD on a suitable stand.
2. While using a ruler to measure the distance from the front of the measuring probe's lens barrel to the LCD's display surface, move the measuring probe or the LCD until the distance is the correct distance for the measurement area in use.

measurement area	ø 25mm	ø 50mm
measurement distance*	135mm+/-5mm	210mm+/-10mm

* Distance from the tip of the measuring probe's lens barrel to the LCD's display surface.



3. While looking through the viewfinder, move the measuring probe or LCD until the LCD section to be measured is inside the measurement-area indication in the viewfinder.



Colour Adjustment

Go to cover page

White Balance Adjustment
Alignment procedure

1. Turn on 150P2E LCD monitor.
2. Turn on the Timing/Pattern generator. See Fig. 1
   Setting generator to provide CROSS-Hatch pattern at
   Resolution : 1024 x 768
   Timing : H= 48 KHz
   V= 60 Hz
3. Preset LCD colour Analyzer CA-110
   - Remove the lens protective cover of probe CA-A30.
   - Set Measuring/viewing selector to Measuring position for reset analyzer. (Zero calibration) as Fig. 2
   - Turn on the colour analyzer (CA-110).
   - Press 0-CAL button to starting reset analyzer. See Fig. 3

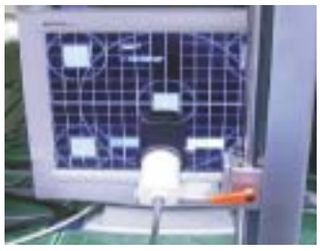


Fig. 1

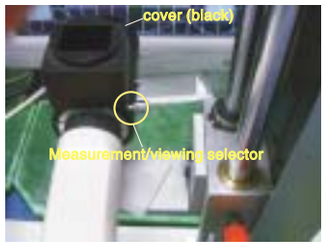


Fig. 2

Fig. 3

4. Entering factory adjustment mode of LCD Monitor.
   - To hold **OK** and **AUTO** buttons then power on the monitor. Press **OK** to bring up OSD menu for confirmation.

Factory mode

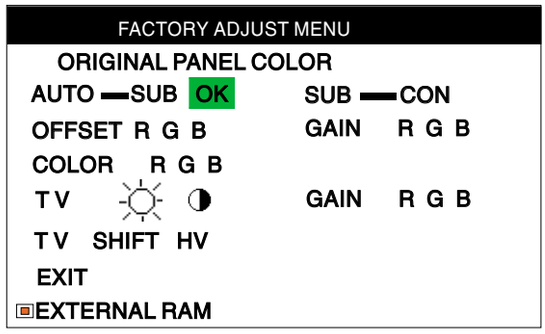
Note : after alignment, please reset OSD to user s mode for normal operation. Otherwise, the monitor won t entering power saving mode and showing full white picture all the time as no video signal supplied. To leave factory mode by restart the monitor.

5. Adjust OSD menu to lower position of screen (i.e. adjust V-position to value " 0 " at submenu of OSD Setting.
6. Setting Brightness and Contrast
   - Adjust Brightness to value " 70" .
   - Adjust Contrast to value " 50" .

7. Switch light probe to Viewing position.
8. Move the Lens barrel forward or backward to get clear image as shown in Fig. 4
9. Switch light probe to Measuring position. It should be able to indicate colour value on the CA-110.

Fig. 4

10. Setting pattern to full white picture.
11. Press **OK** then select LCD TV V1.28 20011030 by ▼ button.
12. Press **OK** to bring up submenu as following windows.



9300° K

13. Press ▲ or ▼ buttons to select R G B. Increase/decrease value by press + − or + − buttons until the X, Y co-ordinates as below:
    x= 0.281 ±0.005
    y= 0.311 ±0.005
    Y>= 250 nits

6500° K

14. Setting X, Y value listed as below:
    X= 0.312± 0.005
    Y= 0.338 ±0.005
    Y>= 250 nits

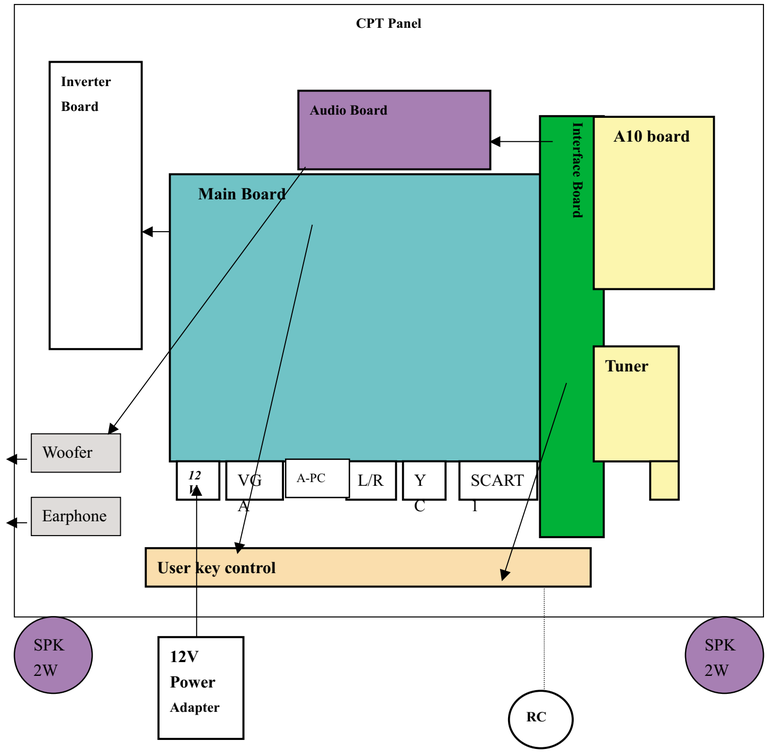
Alignment hits: 1. R for x value , G for y value, B for Y value on the colour analyzer.
2. If the colour analyzer has been calibrated and preset colour temperature in it. Please switch to correct setting in accordance with colour settings.

15. Gray scale checking
    - Switch Timing/pattern generator to
      Pattern: 32 gray scale
      Timing: 1024 X 768 60Hz 48KHz
    - Setting both Brightness and Contrast to 50 (Value).
    - Check black and white scale are visible clearly across the screen. See Fig. 1

Fig. 1

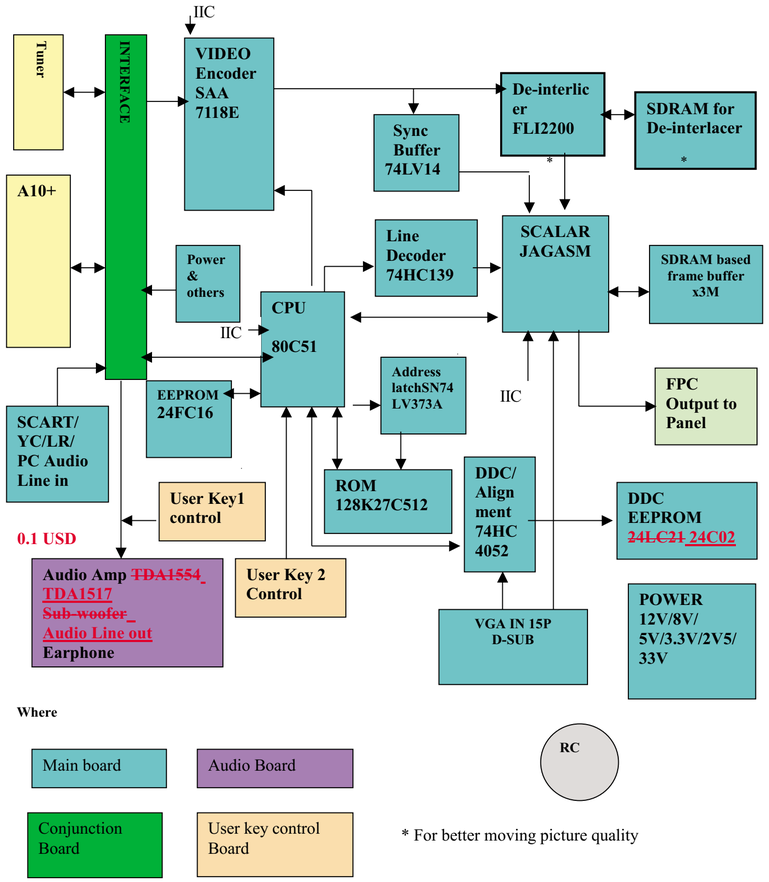
Note: The bright scale will be saturated, if Y is too large. The dark scale will be invisible, if Y is too small. Re-alignment or review procedure again to correct this.

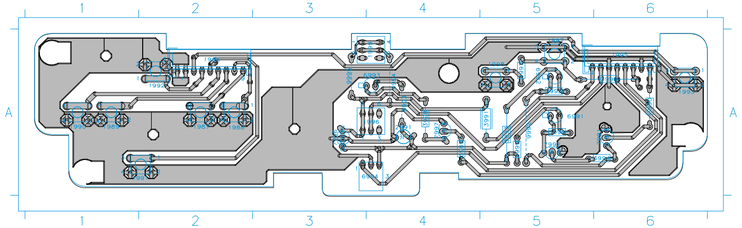
Architecture of Multi-function TV-Monitor

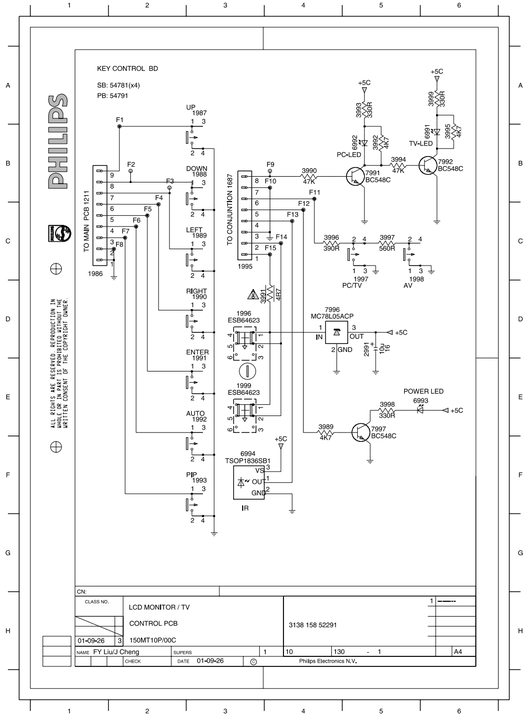


Multi-function LCD-MONITOR FUNCTION BLOCK(W/ PIP)

--Base on A10+ & Sag scalar JAGASM







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F3	B2	
F4	B2	
F5	C2	
F6	C2	
F7	C2	
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F9	B1	
F10	B	
F11	B	
F12	C	
F13	C	
F14	C	
F15	C	
1986		
1987		
1988		
1989		
1990		
1991		
1992		
1993		
1995		
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2991		
3988		
3989		
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3994		
3995		
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3997		
3998		
3999		
6991		
6992		
6993		
6994		
7991		
7992		
7996		
7997		

1986	A2	B
1987	A2	B
1988	A2	B
1989	A1	B
1990	A1	B
1991	A2	B
1992	A2	B
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1995	A6	B
1996	A4	B
1997	A5	B
1998	A5	B
1999	A4	B
2991	A4	B
3989	A4	B
3990	A6	B
3991	A5	B
3992	A5	B
3993	A5	B
3994	A6	B
3995	A5	B
3996	A6	B
3997	A5	B
3998	A4	B
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6991	A5	B
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6993	A4	B
6994	A4	B
7991	A6	B
7992	A5	B
7996	A3	B
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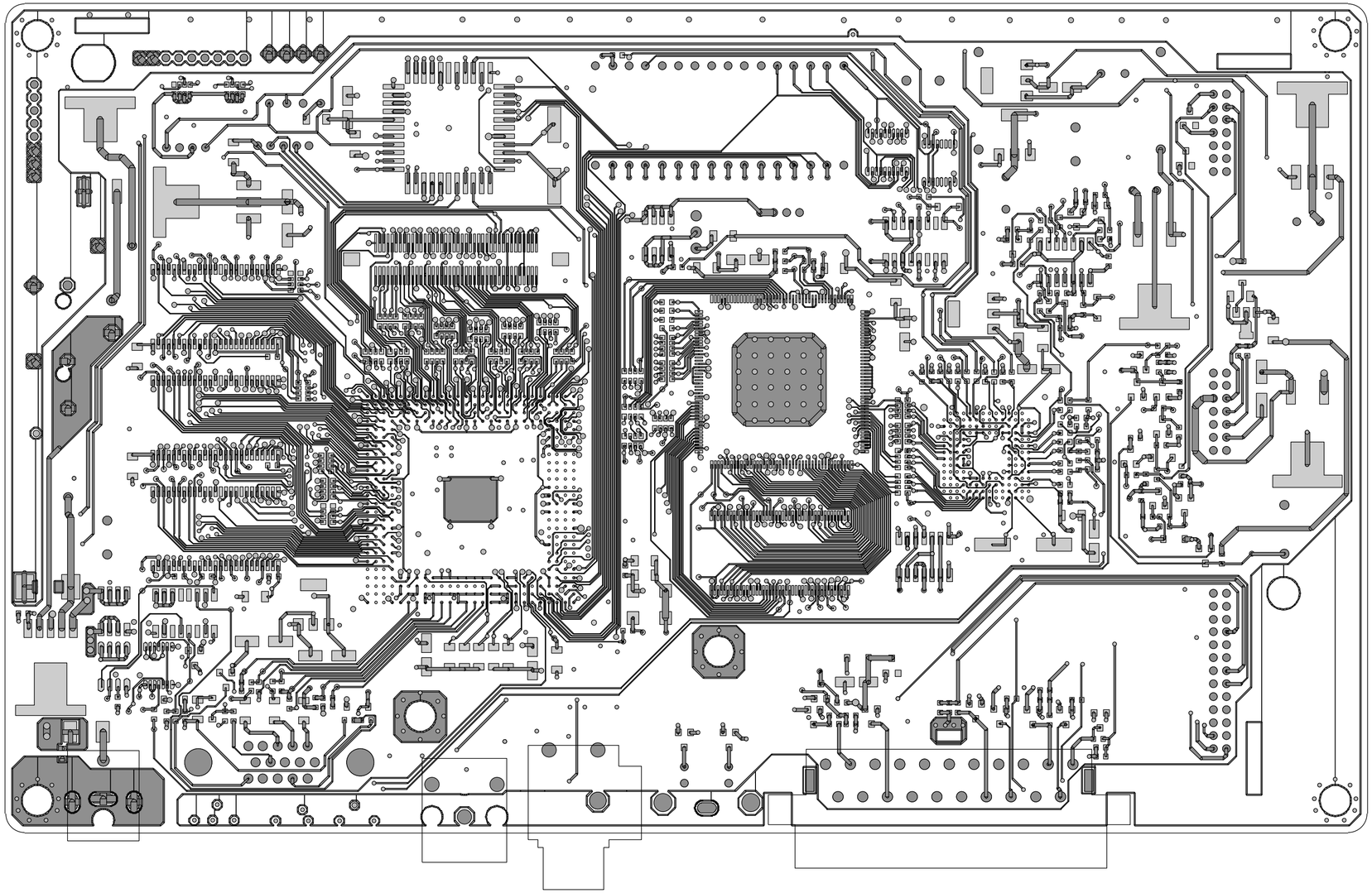
9995	A3	B

Scaler Board C.B.A.



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2374	B5	A	2639	C4	A	3357	C4	A	5312	C6	A						
2375	B5	A	2641	C5	A	3358	C4	A	5321	B4	A						

7406	B6	B
7407	B5	B
7408	B6	B
7409	B6	B
7410	B5	B
7415	A5	B
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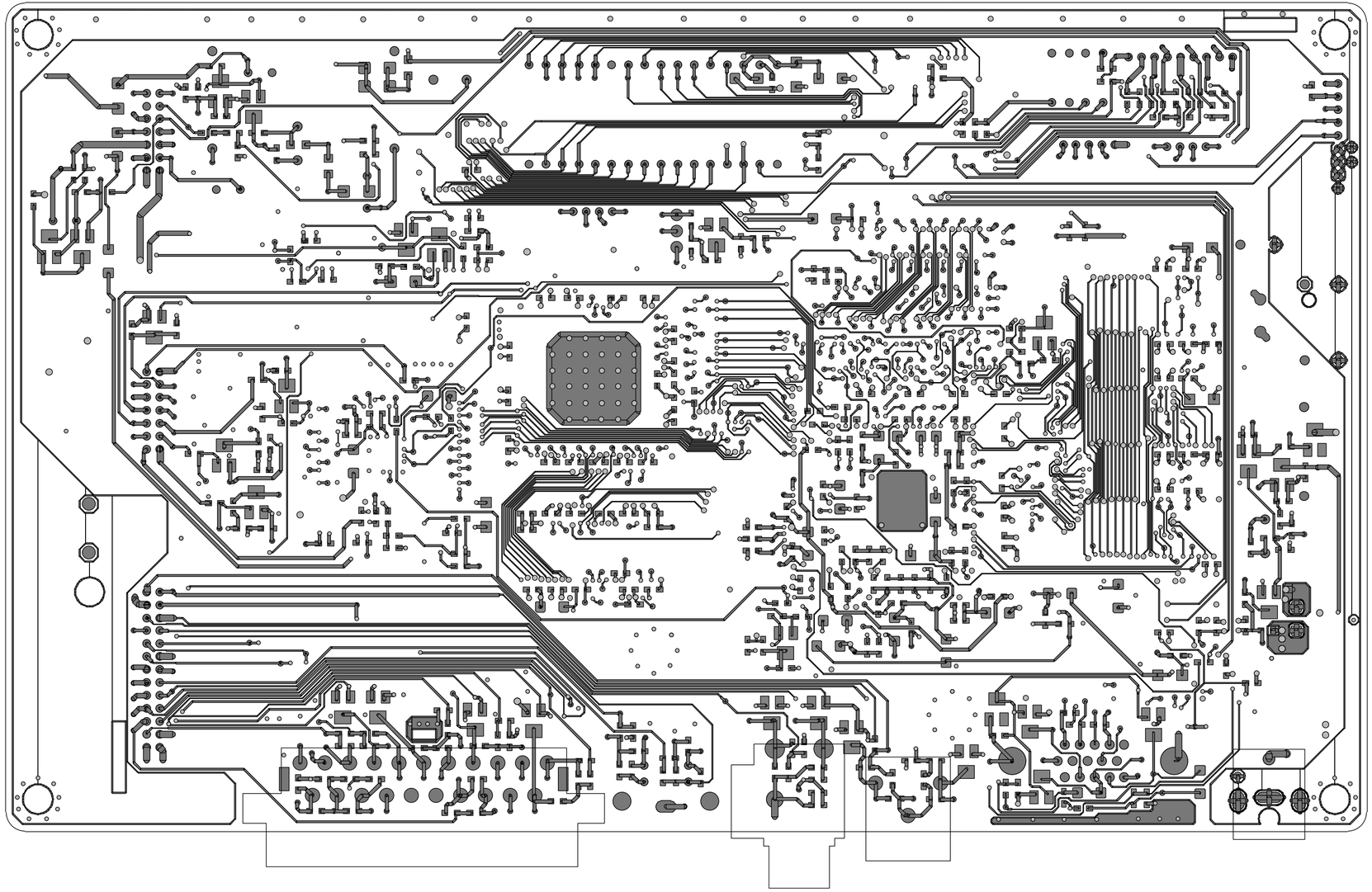
7451	B4	B
7471	B4	B
7621	C4	

Scaler Board (C.B.A)



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1371	A2	B	2357	C3	B	3353	B2	B	5051	A2	B
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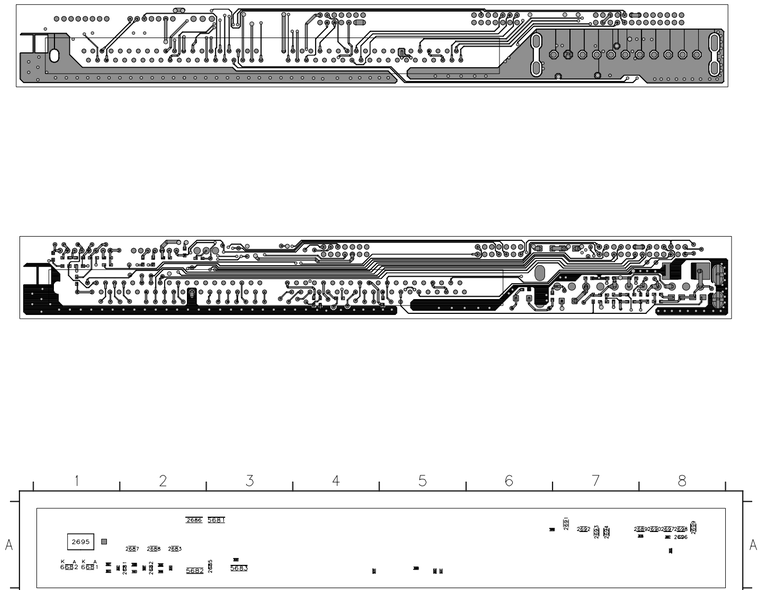
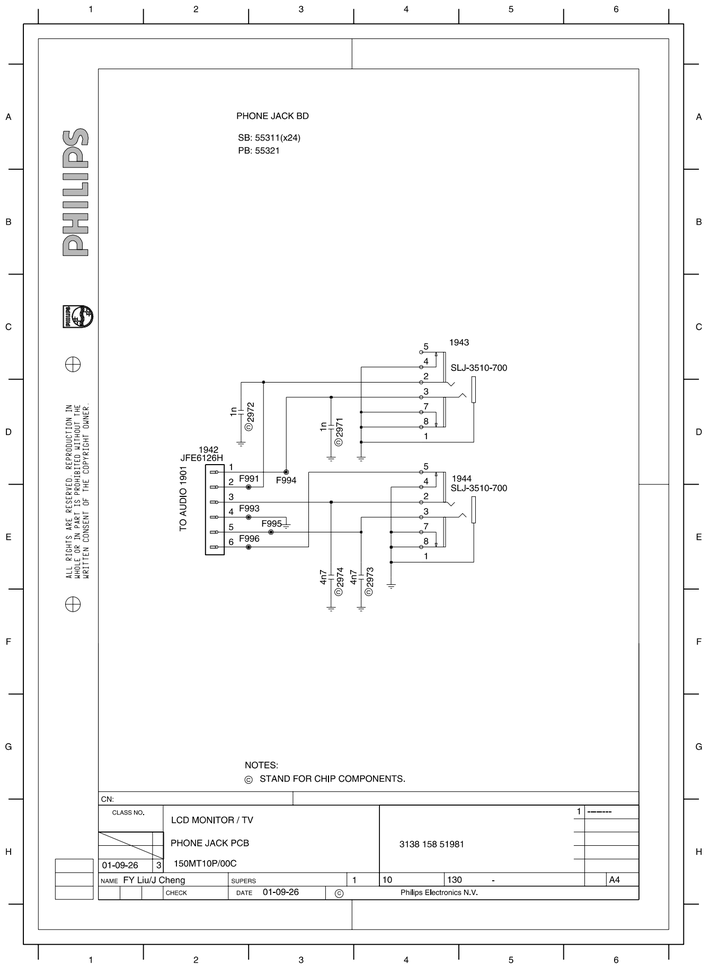
2394	B2	B	2452	A4	B	3432	A5	B	6603	C5	B
2401	B5	B	2456	A4	B	3433	A5	B	6604	C5	B
2402	B5	B	2601	C5	B	3435	A5	B	6605	C5	B
2403	B5	B	2603	C5	B	3437	B6	B	6609	C4	B
2405	B5	B	2607	C5	B	3438	B6	B	6610	C4	B
2406	B5	B	2612	C4	B	3439	B6	B	6612	C4	B
2407	B5	B	2613	C4	B	3441	B6	B	6613	C4	B
2408	B5	B	3006	C1	B	3442	A6	B	6631	C3	B
2409	B5	B	3035	A5	B	3443	B4	B	6632	C4	B
2411	B5	B	3038	A3	B	3444	B4	B	7005	C1	B
2412	B5	B	3056	A5	B	3445	B6	B	7011	B1	B
2413	B5	B	3057	A5	B	3446	B5	B	7016	A1	B
2414	A6	B	3058	A5	B	3447	B5	B	7017	A3	B
2415	B5	B	3059	A5	B	3448	B6	B	7021	A6	B
2416	B6	B	3060	A5	B	3449	B6	B	7022	A5	B
2418	B6	B	3061	A5	B	3450	B6	B	7025	A5	B
2419	B6	B	3062	A5	B	3451	B3	B	7026	B6	B
2426	B5	B	3063	A5	B	3452	B3	B	7027	A6	B
2427	B5	B	3065	A5	B	3457	A4	B	7030	A6	B
2428	A5	B	3066	A5	B	3458	B3	B	7031	A4	B
2429	A5	B	3067	A5	B	3459	A3	B	7035	A5	B
2433	B5	B	3068	A5	B	3461	A3	B	7036	A5	B
2437	A5	B	3069	A5	B	3462	A3	B	7037	A5	B
2438	A5	B	3070	A5	B	3465	A3	B	7038	A5	B
2452	A4	B	3071	A5	B	3466	A3	B	7039	A5	B
2456	A4	B	3072	A5	B	3467	A3	B	7051	A1	B
2601	C5	B	3073	A5	B	3468	A3	B	7052	B2	B
2603	C5	B	3207	A3	B	3469	A4	B	7201	A2	B
2607	C5	B	3211	A2	B	3470	A4	B	7205	A4	B
2612	C4	B	3212	A1	B	3474	A4	B	7206	A5	B
2613	C4	B	3302	C2	B	3475	A4	B	7301	C1	B
3006	C1	B	3303	C2	B	3476	A6	B	7321	C1	B
3035	A5	B	3304	C1	B	3477	A6	B	7322	C1	B
3038	A3	B	3306	C2	B	3481	A6	B	7323	C1	B
3056	A5	B	3307	C2	B	3482	A6	B	7331	B3	B
3057	A5	B	3309	C2	B	3601	C5	B	7361	A1	B
3058	A5	B	3310	C1	B	3602	C5	B	7362	B1	B
3059	A5	B	3311	C2	B	3605	C5	B	7363	B1	B
3060	A5	B	3312	C2	B	3606	C5	B	7401	B5	B
3061	A5	B	3313	C1	B	3607	C5	B	7402	B6	B
3062	A5	B	3315	C2	B	3609	C5	B	7403	B6	B
			3316	C2	B	3613	C5	B	7405	B5	B

Conjunction Diagram



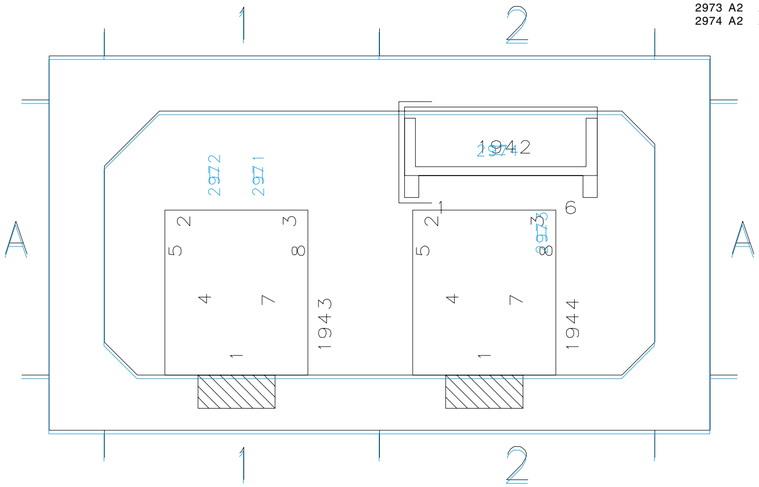
2681 A2 A
2682 A2 A
2683 A2 A
2685 A3 A
2686 A2 A
2687 A2 A
2688 A2 A
2689 A8 A
2690 A8 A
2691 A7 A
2692 A7 A
2693 A7 A
2694 A7 A
2695 A1 A
2696 A8 A
2697 A8 A
2698 A8 A
2699 A8 A
3681 A5 A
3682 A5 A
3683 A2 A
3684 A2 A
3685 A2 A
3686 A2 A
3687 A1 A
3688 A2 A
3689 A5 A
3690 A2 A
3691 A1 A
3692 A1 A
3693 A3 A
3694 A4 A
3695 A8 A
3696 A8 A
3697 A8 A
3698 A6 A
5681 A3 A
5682 A2 A
5683 A3 A
6681 A1 A
6682 A1 A
1681 A6 B
1682 A5 B
1683 A3 B
1685 A2 B
1686 A7 B
1687 A8 B
1688 A6 B
1689 A2 B

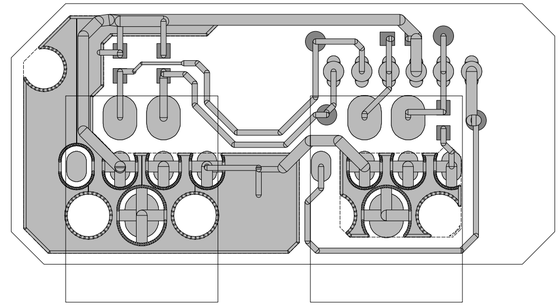
Phone Jack PCB



1942 D
1943 C
1944 D
2941 D
2942 D
2943 E
2944 E
F991 D
F992 E
F993 E
F994 D
F995 E
F996 E

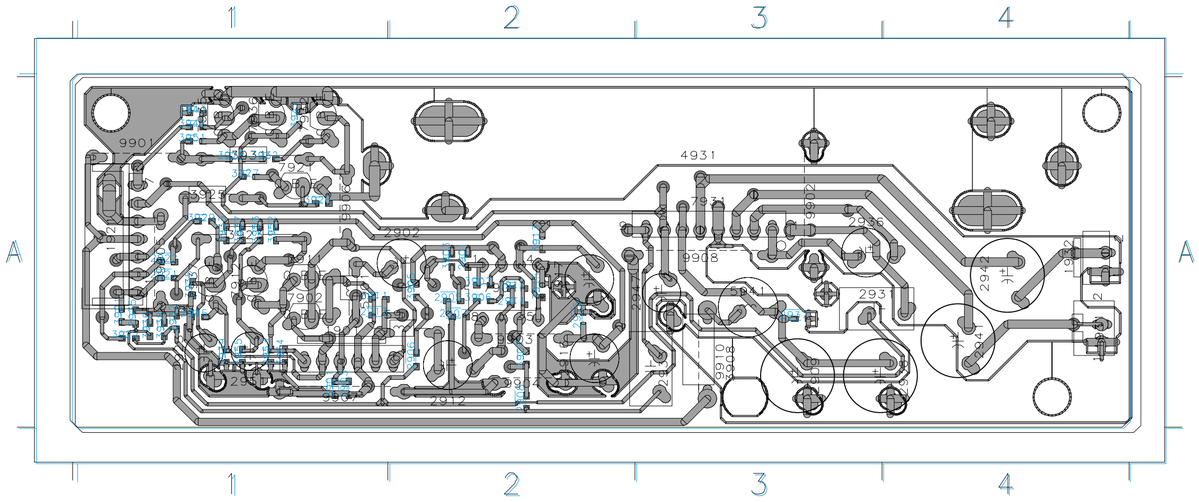
Phone Jack C.B.A





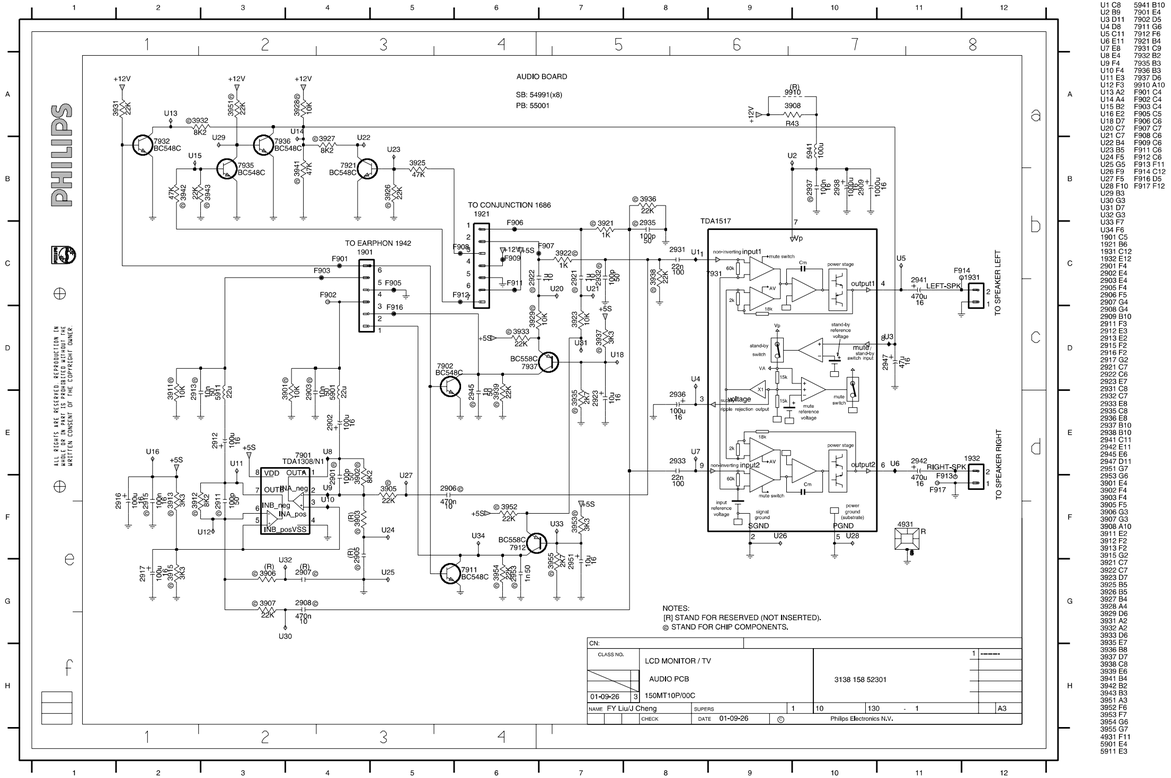
1942 A2 B
1943 A1 B
1944 A2 B
2971 A1 A
2972 A1 A
2973 A2 A
2974 A2 A

Sound Board (C.B.A)



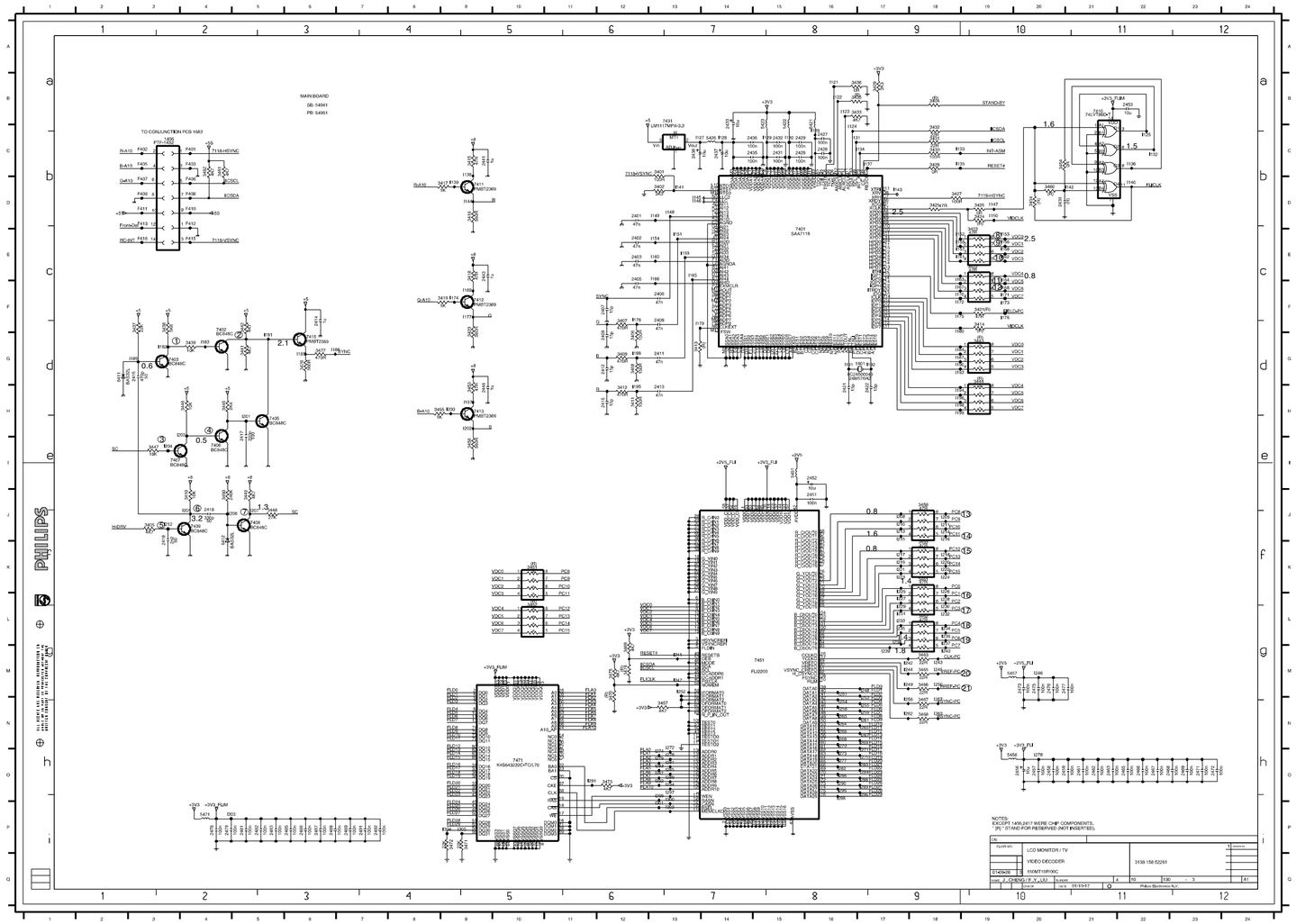
2901	A2	A	3935	A1	A	3931	A1	B
2903	A1	A	3936	A1	A	4931	A3	B
2905	A2	A	3937	A1	A	5901	A1	B
2906	A2	A	3938	A1	A	5911	A2	B
2907	A2	A	3939	A1	A	5941	A3	B
2908	A2	A	3941	A1	A	7901	A2	B
2911	A2	A	3942	A1	A	7902	A1	B
2913	A1	A	3943	A1	A	7911	A1	B
2915	A2	A	3951	A1	A	7912	A1	B
2921	A1	A	3952	A1	A	7921	A1	B
2922	A1	A	3953	A1	A	7931	A3	B
2932	A1	A	3954	A1	A	7932	A1	B
2935	A1	A	3955	A1	A	7935	A1	B
2937	A3	A	1901	A1	B	7936	A1	B
2945	A1	A	1921	A1	B	7937	A1	B
2953	A1	A	1931	A4	B	9901	A1	B
3901	A1	A	1932	A4	B	9902	A3	B
3902	A2	A	2902	A2	B	9903	A2	B
3903	A2	A	2909	A3	B	9904	A2	B
3905	A2	A	2912	A2	B	9905	A1	B
3906	A2	A	2916	A2	B	9906	A1	B
3907	A2	A	2917	A2	B	9907	A1	B
3911	A1	A	2923	A1	B	9908	A3	B
3912	A2	A	2931	A3	B	9910	A3	B
3913	A2	A	2933	A3	B			
3915	A2	A	2936	A3	B			
3921	A1	A	2938	A4	B			
3922	A1	A	2941	A4	B			
3926	A1	A	2942	A4	B			
3927	A1	A	2947	A3	B			
3928	A1	A	2951	A1	B			
3929	A1	A	3908	A3	B			
3932	A1	A	3923	A1	B			
3933	A1	A	3925	A1	B			

Audio PCB

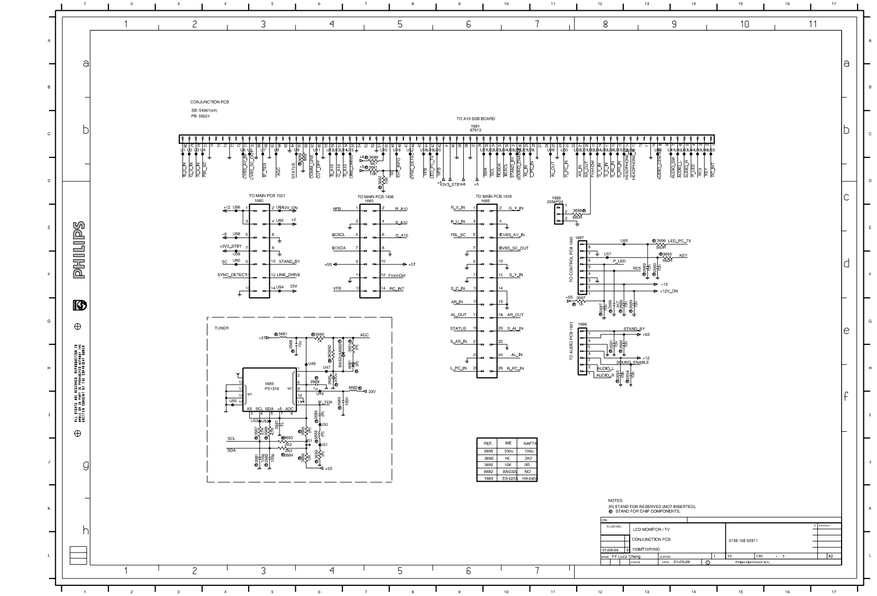


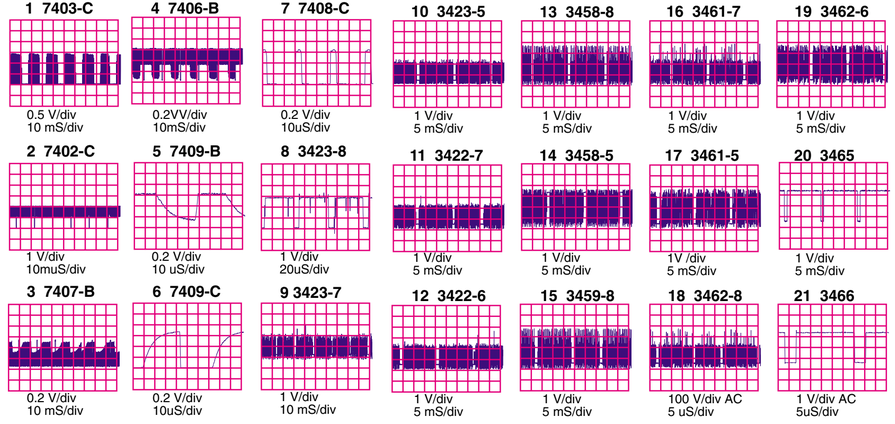
U1	C8		5941	B10				
U2	B9		7901	E4				
U3	D11		7902	D5				
U4	D8		7911	G6				
U5	C11		7912	F6				
U6	E11		7921	B4				
U7	E8		7931	C9				
U8	E4		7932	B2				
U9	F4		7935	B3				
U10	F4		7936	B3				
U11	E3		7937	D6				
U12	F3		9910	A10				
U13	A2		1901	C4				
U14	A4		1902	C4				
U15	B2		1903	C4				
U16	E2		1905	C5				
U18	D7		1906	C6				
U20	C7		1907	C7				
U21	C7		1908	C6				
U22	B4		1909	C6				
U23	B5		1911	C6				
U24	F5		1912	C6				
U25	G5		1913	F11				
U26	F9		1914	C12				
U27	F5		1916	D5				
U28	F10		1917	F12				
U29	B3							
U30	G3							
U31	D7							
U32	G3							
U33	F7							
U34	F6							
1901	C5							
1921	B6							
1931	C12							
1932	E12							
2901	F4							
2902	E4							
2903	E4							
2905	F4							
2906	F5							
2907	G4							
2908	G4							
2909	B10							
2911	F3							
2912	E3							
2913	E2							
2915	F2							
2916	F2							
2917	G2							
2921	C7							
2922	C6							
2923	E7							
2931	C8							
2932	C7							
2933	E8							
2935	C8							
2936	E8							
2937	B10							
2938	B10							
2941	C11							
2942	E11							
2945	E6							
2947	D11							
2951	G7							
2953	G8							
3901	E4							
3902	F4							
3903	F4							
3905	F5							
3906	G3							
3907	G3							
3908	A10							
3911	E2							
3912	F2							
3913	F2							
3915	G2							
3921	C7							
3922	C7							
3923	D7							
3925	B5							
3926	B5							
3927	B4							
3928	A4							
3929	D6							
3931	A2							
3932	A2							
3933	D6							
3935	E7							
3936	B8							
3937	D7							
3938	C8							
3939	E6							
3941	B4							
3942	B2							
3943	B3							
3951	A3							
3952	F6							
3953	F7							
3954	G6							
3955	G7							
4931	F11							
5911	E4							
5911	E3							

Schematic Diagram (Video Decorder)

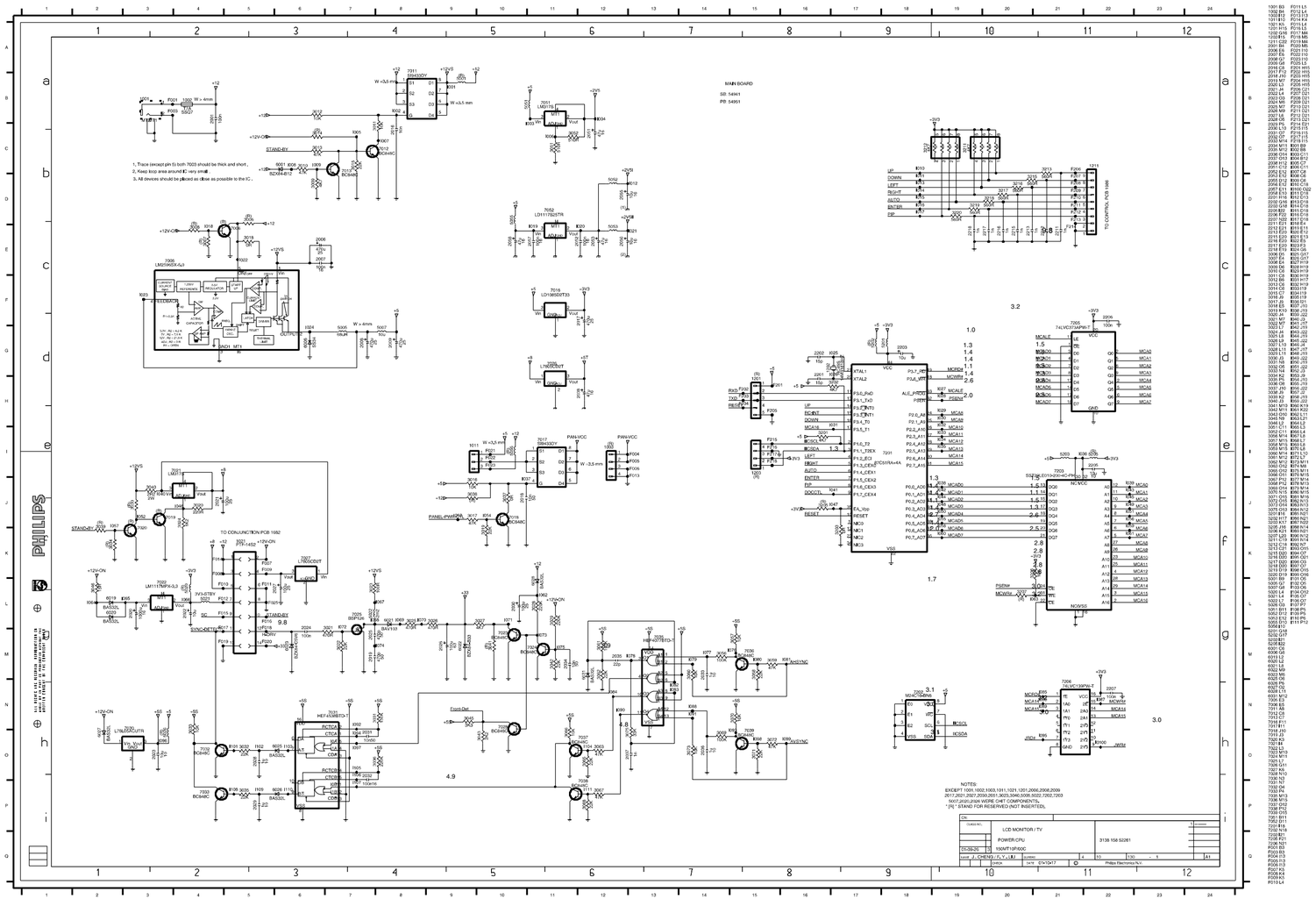


Schematic Diagram (Conjunction PCB)

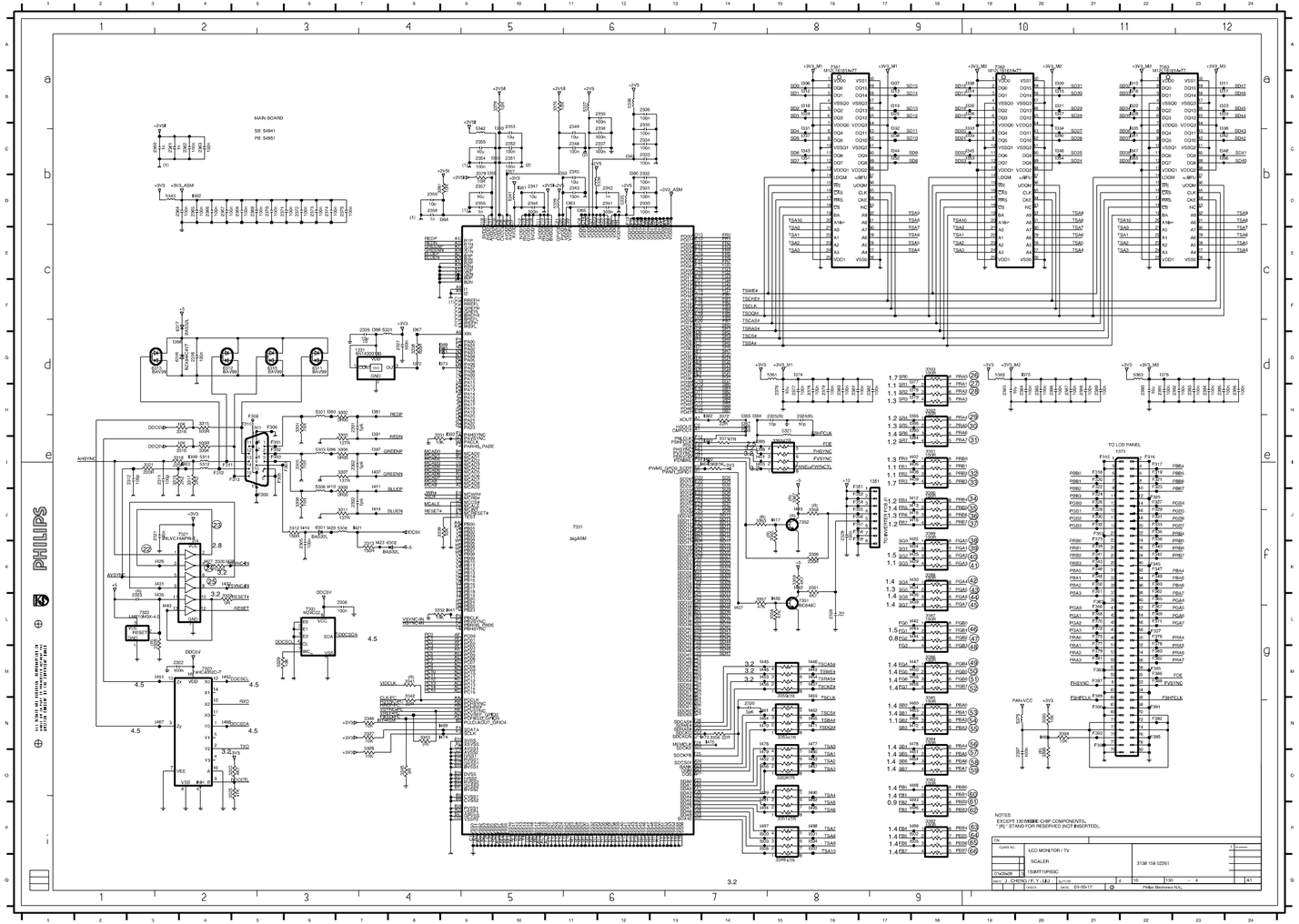




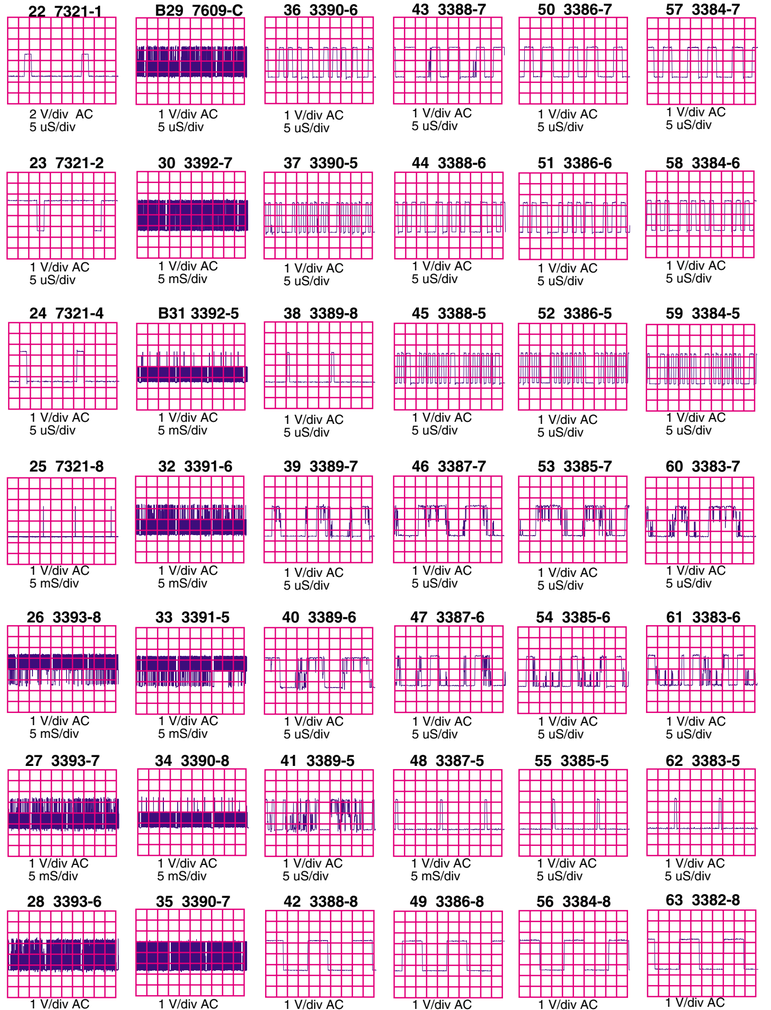
Schematic Diagram (MCU)


MAIN BOARD
SB: 54941
PB: 54951
1, Trace (except pin 5) both 7003 should be thick and short .
2, Keep loop area around IC very small .
3, All devices should be placed as close as possible to the IC .
TO CONJUNCTION PCB 1682
TO CONTROL PCB 1680
NOTES:
EXCEPT 1001,1002,1003,1011,1021,1201,2006,2008,2009
2017,2021,2027,2030,2051,3023,3040,5006,5022,7202,7203
1607,2020,2024 WERE CHIT COMPONENTS.
(R) STAND FOR RESERVED (NOT INSERTED).
LCD MONITOR / TV
POWER CPU
150MT10P/00C
3139 156 52261
Philips Electronics N.V.

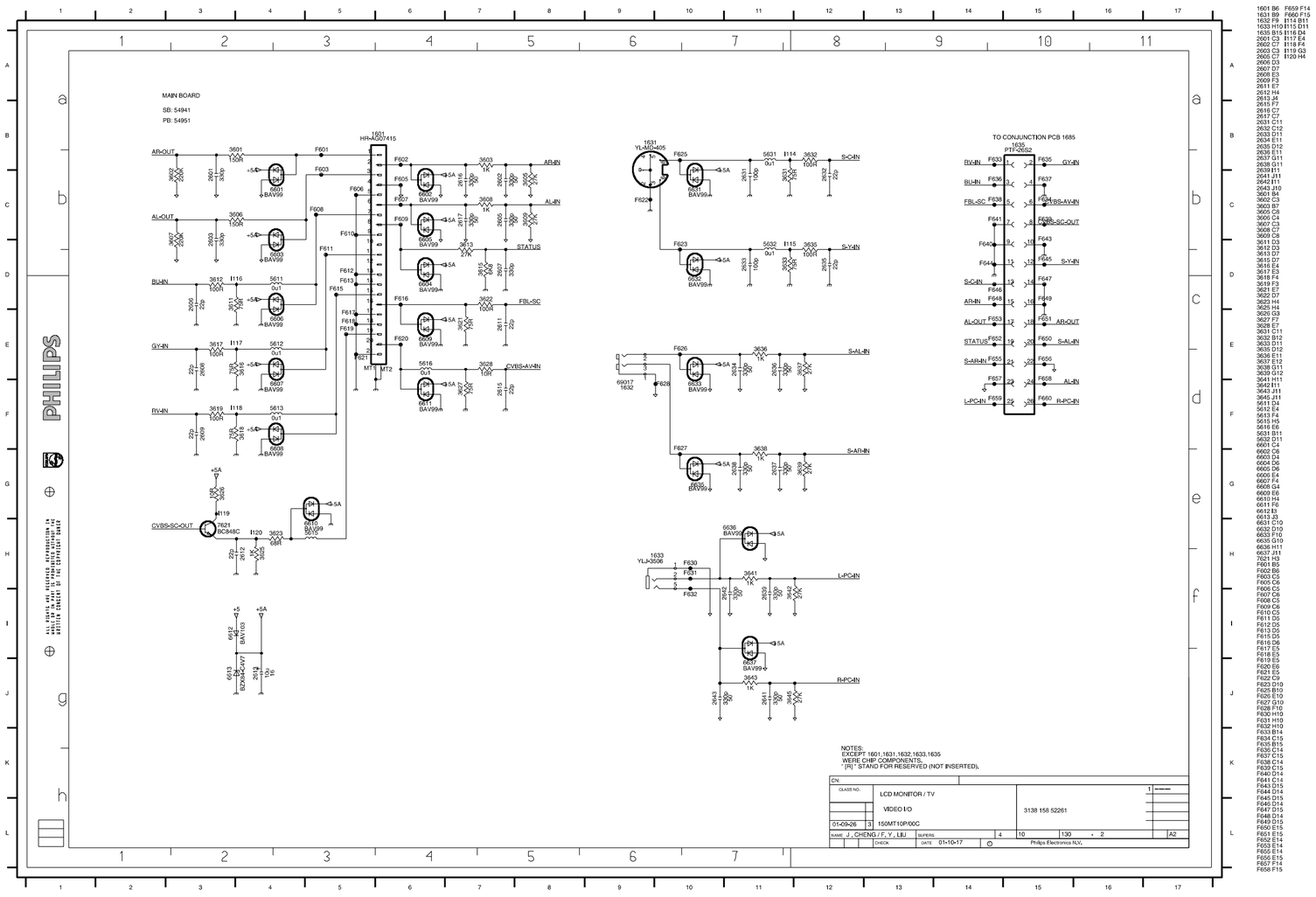
Schematic Diagram (Scaler)



Waveforms

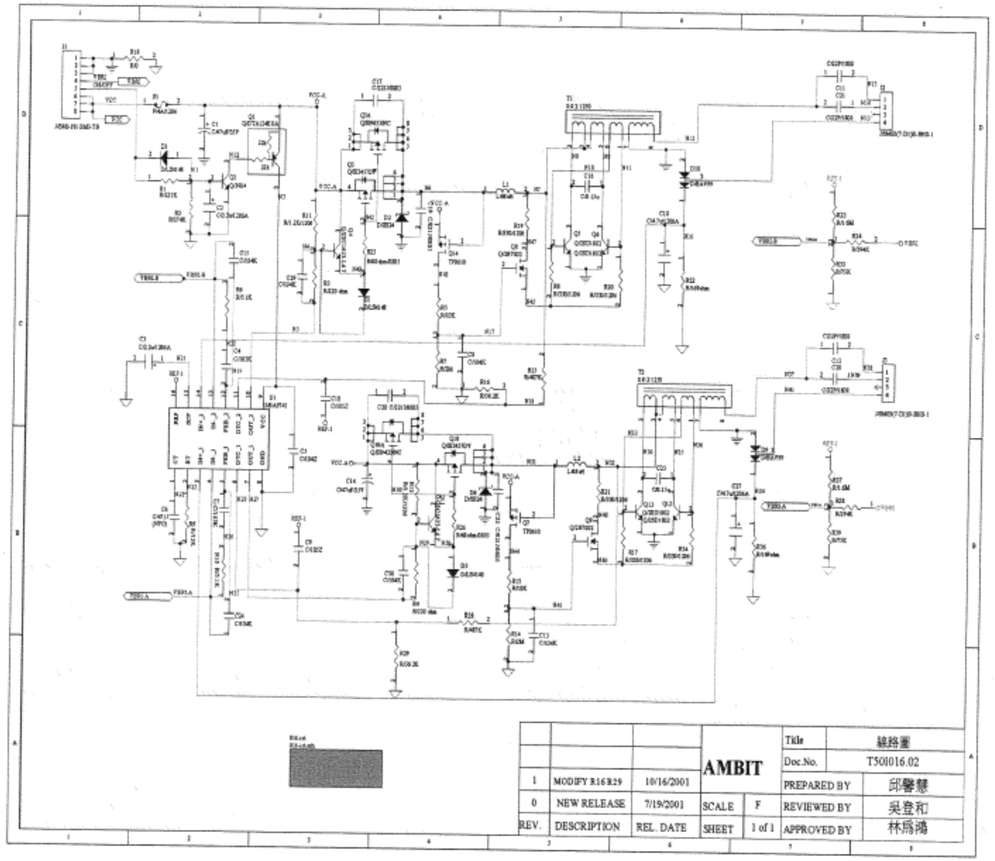


Schematic Diagram (Video I/O)



1601 B6 F659 F14
1631 B9 F660 F15
1632 F9 I114 B11
1633 H10 I115 D11
1635 B15 I116 D4
2601 C3 I117 E4
2602 C7 I118 F4
2603 C3 I119 G3
2605 C7 I120 H4
2606 D3
2607 D7
2608 E3
2609 F5
2611 E7
2612 H4
2613 J4
2615 F7
2616 C7
2617 C7
2631 C11
2632 C12
2633 D11
2634 E11
2635 D12
2636 E11
2637 G11
2638 G11
2639 I11
2641 J11
2642 I11
2643 J10
3601 B4
3602 C3
3603 B7
3605 C6
3606 C4
3607 C3
3608 C7
3609 C6
3611 D3
3612 D3
3613 D7
3615 D7
3616 E4
3617 E3
3618 F4
3619 F3
3621 E7
3622 D7
3623 H4
3625 H4
3626 G3
3627 F7
3628 E7
3631 I11
3632 I12
3633 I12
3635 D12
3636 E11
3637 E12
3638 G11
3639 G12
3641 H11
3642 I11
3643 J11
3645 J11
5611 D4
5612 E4
5613 F4
5615 H5
5616 E6
5631 B11
5632 D11
6601 C4
6602 C6
6603 D4
6604 D6
6605 D6
6606 E4
6607 F4
6608 G4
6609 E6
6610 H4
6611 F6
6612 I3
6613 J3
6631 C10
6632 D10
6633 F10
6635 G10
6636 H11
6637 J11
7621 H3
F601 B5
F602 B6
F603 C5
F605 C6
F606 C5
F607 C6
F608 C5
F609 C6
F610 C5
F611 D5
F612 D5
F613 D5
F615 D5
F616 D6
F617 E5
F618 E5
F619 E5
F620 E6
F621 E5
F622 C9
F623 D10
F625 B10
F626 E10
F627 G10
F628 F10
F630 H10
F631 H10
F632 H10
F633 B14
F634 C15
F635 B15
F636 C14
F637 C15
F638 C14
F639 C15
F640 D14
F641 C14
F643 D15
F644 D14
F645 D15
F646 D14
F647 D15
F648 D14
F649 D15
F650 E15
F651 E15
F652 E14
F654 E14
F655 E14
F656 E15
F657 F14
F658 F15

Inverter Diagram



REV.	DESCRIPTION	REL. DATE
1	MODIFY R16/R29	10/16/2001
0	NEW RELEASE	7/19/2001

AMBIT

SCALE F
SHEET 1 of 1

Title	線路圖
Doc.No.	T501016.02
PREPARED BY	邱馨慧
REVIEWED BY	吳登和
APPROVED BY	林烏鴻

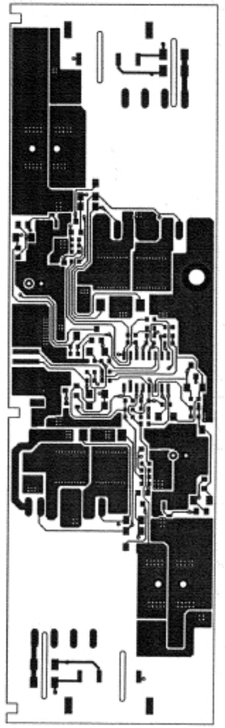
5. Circuit Schematic:

*** 機密文件 不得翻印 ***

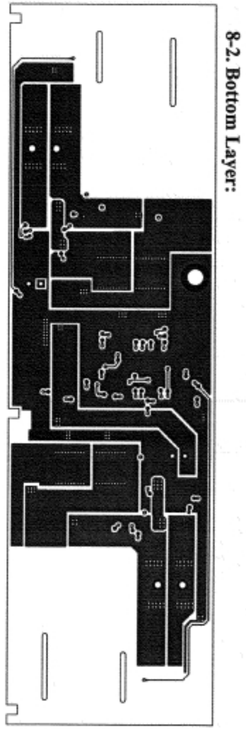
Inverter layout drawings

8.Layout Drawings

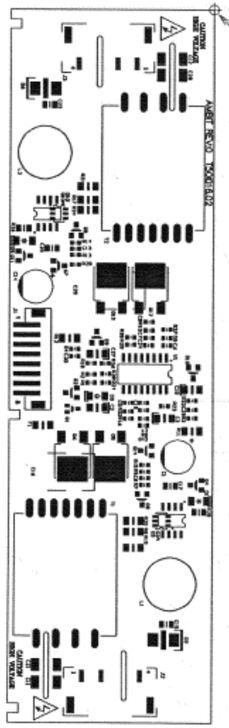
8-1.Top Layer:



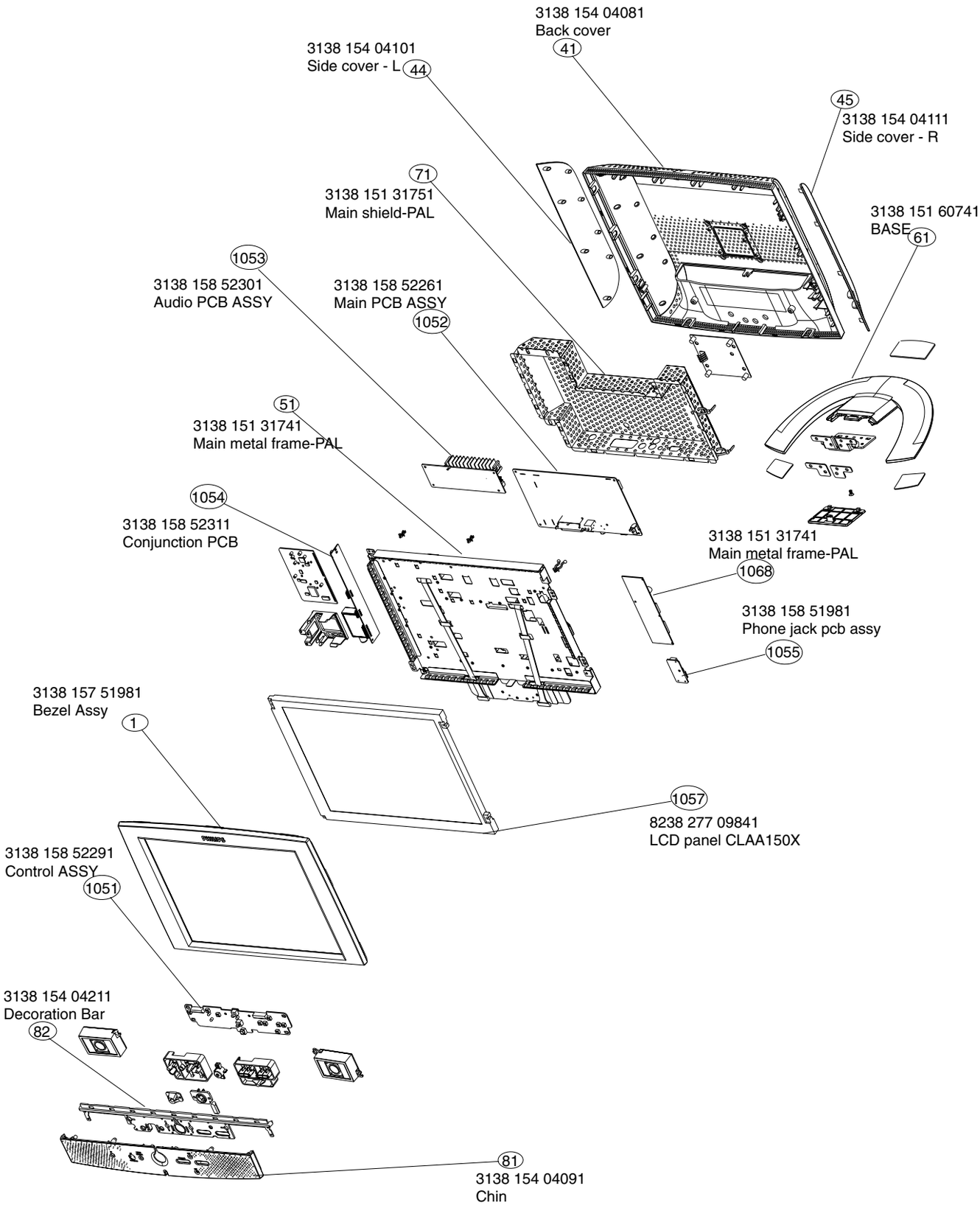
8-2. Bottom Layer:



8-3. Top Silk Screen Overlayer:



Exploded View



Go to cover page

Recommended Parts List

Model: 150MT10P/00C/74C

Item	Code Number	Description
1	313815751981	BEZEL ASSY
2	313815752001	BACK COVER ASSY
3	313815751991	CHIN ASSY
4	313815752011	TILT BASE ASSY
6	313815404251	BASE COVER
30	313815552931	PLASTIC COVER
31	313815404071	FRONT BEZEL
41	313815404081	BACK COVER
44	313815404101	SIDE COVER-L
45	313815404111	SIDE COVER-R
61	313815160741	BASE
81	313815404091	CHIN
82	313815404211	DECORATION BAR
450	313815631481	CARTON
451	313815631451	FORM SHEET-FRONT
452	313815631461	FORM SHEET-REAR
453	313815620612	P.E.BAG-ANTI-STAT.
601	313811703661	E-D.F.U. ASSY
1052	313815852261	MAIN PCB ASSY(WE)
1052	313815853751	MAIN PCB ASSY(NAFTA)
1060	313812874931	MAINS CORD(WE)
1060	313812874901	MAINS CORD(NAFTA)
1065	929900010137	BAT ZNC 1.5V R6/AA
1066	313922889481	RC25106/00 Remote controller(WE)
1066	313922889471	RC25107/00 Remote controller(NAFTA)
1062	313818872471	PC AUDIO IN CABLE
1064	313816878511	I/F CABLE
1068	313818872551	15"LCD MONITOR INVERTER
1069	313818873652	AC/DC ADAPTOR
	313810610197	ROM assy with program (7203)
	313810610200	EEPROM with program assy (7202)
6694	932213169687	IR RECEIVER TSOP1836SS3V
7011	932211529668	FET POW SM SI9433DY
7201	935256600112	IC SM P80C51RA+4A
7202	932212662682	IC M24C16-BN6
7331	932218389671	IC SM JagASM
7410	935209280118	IC SM 74LVT86D
7431	932216733668	IC SMLD1117S33
7451	823827709161	DE-INTERLACE IC
7471	932217603668	IC SM K4S643232E-TC50
1057	932217987682	TFT-LCD CLAA150XE01(CPT0)B
1067	313818872522	SPEAKER W/BOX +WIRE ASSY-L/R
8158	313818872592	FPC 80P/197/FINGER45+30.5

3138 188 72551 DC-AC INVERTER

C1	9965 000 05458	CAP. AL 35MV47SAX/SGX(SANYO)
C16	9965 000 11545	CAP. PPS 2A104K TAPING (SUNG HO)
D2	9965 000 06330	DIODE SBD S24 SMA(GW)
Q5	9965 000 06331	TR NPN 2SD1802T-TL DPAK/SANYO
Q1	9965 000 05479	TR DTA124EUA
Q10	9965 000 05480	FET <1W SI3457DV
U1	9965 000 06332	IC BA9741F SOP16(ROHM)
Q9	4822 130 11057	FET <1W 2N7002
T1	9965 000 06334	XFMR XL-1713-13010(XTREME)
F1	9965 000 11546	FUSE KE40 1206(DAITO)

Model	item	12NC	Description
/00C	1054	313815852311	CONJUCTION PCB ASSY(WE)
	1170	313913725771	A10 SSB ASSY(WE)
/74C	1054	313815853581	CONJUCTION PCB ASSY(NAFTA)
	1170	313913729641	A10 SSB ASSY(NAFTA)
/97C	1054	313815853711	CONJUCTION PCB ASSY(AP)
	1170	313917721241	A10 SSB ASSY(APTA)

MODEL :150MT10P/00C

0001 313815751981 BEZEL ASS'Y
0002 313815752001 BACK COVER ASS'Y
0003 313815751991 CHIN ASS'Y
0004 313815752011 TILT BASE ASSY
0006 313815404251 BASE COVER
0007 313815404151 POWER KNOB
0009 313815752211 MAIN SHIELD ASSY - PAL
0010 313815752241 MAIN METAL FRAME ASSY
0013 313815160811 CONTACT SPRING - CONJUNCTION
0014 313815160761 CONTACT SPRING - TUNER_PAL
0016 313815404191 A10 SUPPORT
0019 313815040281 SCREW-PHWM3-0.5X6
0020 313810040201 TAPPING SCREW WITH WASHER
0021 313815040231 SCREW-PHW+LWM3-24X8TP-B BLACK
0022 313815040241 SCREW -PH6#-19X9 TP-P BLACK
0023 313810041651 SCREW PHM30X12PT
0024 313810040981 HI-LO SCREW 3.5X9
0025 313810041721 SCREW BH-LW M4-0.7X8
0026 313810041381 SCREW PH K30X8 PT
0027 313815404491 PANEL - CONNECTOR AREA-PAL
0028 313815404691 INSULATOR PLATE - CONTROL PCB
0030 313815552931 PLASTIC COVER
0031 313815404071 BEZEL
0039 313810440571 HOUSING COVER
0041 313815404081 BACK COVER
0044 313815404101 SIDE COVER - L
0045 313815404111 SIDE COVER - R
0045 313815160821 HEAT SINK - AUDIO
0046 313815131851 VESA PLATE
0046 313810040201 TAPPING SCREW WITH WASHER
0047 132250497401 GREASE SILICONE DC4
0051 313815131741 MAIN METAL FRAME - PAL
0052 313815160801 CONTACT SPRING
0053 313815320441 CABLE CLIP (CS-04)
0054 313815320451 CABLE CLIP (TA8-3L)
0057 313815320251 REINFORCED TAPE
0061 313815160741 BASE
0062 313815131811 HINGE ASSEMBLY
0063 313815404421 SCREW COVER - BASE
0064 313815404571 RUBBER PAD-BASE CENTER
0065 313815404761 RUBBER PAD-BASE LEFT
0066 313815404771 RUBBER PAD - BASE RIGHT
0067 313815404781 RUBBER PAD-HINGE LEFT (BASE)
0068 313815404791 RUBBER PAD-HINGE RIGHT (BASE)
0069 313815040251 SCREW - M4-0,7X8
0071 313815131751 MAIN SHIELD - PAL
0072 313810320263 CABLE TIE NC3
0081 313815404091 CHIN
0082 313815404211 DECORATION BAR
0083 313815404171 LENS - PC/TV
0084 313815404161 LENS - IR
0085 313815404141 POWER RING
0086 313815404121 CONTROL KNOB - L
0087 313815404131 CONTROL KNOB - R
0089 313810040981 HI-LO SCREW 3.5X9
0129 313810600121 FAMILY SHEET- SERVICE
0131 313810600721 FAMILY SHEET
0133 313810632613 PE BAG
0139 313815320071 EXSICCATOR
0140 313800990021 PROCESS BOX
0141 313815520881 QUICK SETUP GUIDE
0141 823827711181 3M ELEC. TAPE NO. 5
0143 313815551571 LABEL
0161 313810355321 PHONE JACK PCB
0171 313810354951 MAIN PCB
0172 313815550562 PRODUCT TRACFABILITY LABEL
0181 313810354791 CONTROL PCB
0182 313815405901 HOLDER-IR
0183 313810600121 FAMILY SHEET- SERVICE
0191 313810355001 AUDIO PCB
0201 313815552921 RATING LABEL
0211 313810355021 CONJUCTION PCB
0212 313815404201 TUNER SUPPORT
0213 313810600121 FAMILY SHEET- SERVICE
0214 313810600121 FAMILY SHEET- SERVICE
0270 313800990051 PROCESS BOX
0271 063899500005 SOLD WIRE 1.22MM
0272 061105900002 SOLD BAR SN60PB38BI2 750G
0273 132251149002 ISOPROPANOL DENAT 99.7% 2L B
0274 132252643001 FLUX SOLD ALPHA RF8 B
0275 063899500006 SOLD WIRE 60/40 NGR 0.062
0276 313815552951 LABEL-EEPROM
0277 313815552961 LABEL-FLASH ROM
0281 063899500005 SOLD WIRE 1.22MM
0281 063899500005 SOLD WIRE 1.22MM
0281 063899500005 SOLD WIRE 1.22MM
0281 063899500005 SOLD WIRE 1.22MM
0282 061105900002 SOLD BAR SN60PB38BI2 750G
0282 061105900002 SOLD BAR SN60PB38BI2 750G
0282 061105900002 SOLD BAR SN60PB38BI2 750G
0282 061105900002 SOLD BAR SN60PB38BI2 750G
0283 132251149002 ISOPROPANOL DENAT 99.7% 2L B
0283 132251149002 ISOPROPANOL DENAT 99.7% 2L B
0283 132251149002 ISOPROPANOL DENAT 99.7% 2L B
0283 132251149002 ISOPROPANOL DENAT 99.7% 2L B
0284 132252643001 FLUX SOLD ALPHA RF8 B
0284 132252643001 FLUX SOLD ALPHA RF8 B
0284 132252643001 FLUX SOLD ALPHA RF8 B
0284 132252643001 FLUX SOLD ALPHA RF8 B
0285 063899500006 SOLD WIRE 60/40 NGR 0.062
0285 063899500006 SOLD WIRE 60/40 NGR 0.062
0285 063899500006 SOLD WIRE 60/40 NGR 0.062
0285 063899500006 SOLD WIRE 60/40 NGR 0.062
0287 313800990051 PROCESS BOX
0288 313800990271 PROCESS BOX
0289 313800990051 PROCESS BOX
0290 313800990051 PROCESS BOX
0300 282206240595 INK CARTRIDGE -EP-T
0357 313814970681 BB PACKING
0450 313815631481 CARTON
0451 313815631451 FORM SHEET - FRONT
0452 313815631461 FORM SHEET - REAR
0453 313815620612 P.E. BAG-ANTI-STAT.
0454 122210033005 TAPE ADH CELLOPH 19MM TRP
0455 123810078007 TAPE S-ADH PP 0.065X75MM NT
0456 313815631471 SLEEVE - INNER
0500 083802600004 LLDPE WRAP
0501 283880090222 PALLET
0503 313810651051 CARD BOARD
0601 313811703661 E-D.F.U ASSY
0602 313811703671 E-D.F.U
0615 313811703741 HEX CODE F/W(NO MATL REQ)
1001 823827711021 SOC POW H 1P F DC BLK
1002 823827710841 FUSE SM 7A 125V
1011 313816020021 HEADER 3X1 82540-0311
1012 313816020291 JUMPER (BLACK)
1021 313818872321 CON BM V 14P F 2.0
1051 313815852291 CONTROL PCB ASSY
1052 313815852261 MAIN PCB ASSY
1053 313815852301 AUDIO PCB ASSY
1054 313815852311 CONJUNCTION PCB ASSY
1055 313815851981 PHONE JACK PCB ASSY
1057 823827709841 LCD PANEL CLAA150XE01 (CPT0) B
1060 313812874931 MAINS CORD
1061 823827710771 CORD S-VIDEO 1M5 S-VIDEO M BLK
1062 823827710791 CORD PHONE 1M5 PHONE M BLK
1063 823827710811 CORD PHONE 1M5 PHONE M
1064 313816878511 I/F CABLE
1065 929900010137 BAT ZNC 1.5V R6/AA 2-PACK Y
1066 313922889481 PRODUCT ASSY RC25107/ PACKED
1067 823827710861 SPEAKER W/BOX + WIRE ASSY- L/R
1068 823827710641 15'' LCD MONITOR INVERTER
1069 823827710851 AC/DC ADAPTOR
1170 313913725771 SB-WEU-CM-HIS-1-SA-LCD
1202 243854300093 RES XTL SM 14M31818 7P SMD49 R
1208 243803100146 SOC IC V 8P F 2.54 DIL B
1209 823827710931 SOC IC V 32P F 2.54 DIL B
1211 313818872441 CON BM V 9P M 2.0 M2426
1301 243803100416 CON BM PAN H 15P F SUB-D B
1331 243854300092 OSC XTL SM 14M318 R
1351 313816879511 CON JFE6338 8P VERT. ENTRY
1371 242202517152 CON BM V 80P F 0.6 52760 L
1401 243854300096 RES XTL SM 24M576 16P SMD-49 R
1406 823827710891 CON BM V 14P M 2.0 68657
1601 823827711031 CON SCART 1M5 SCART M BLK
1631 823827705831 MINI DIN JACK
1632 823827709791 AUDIO JACK
1633 823827705811 EARPHONE JACK
1635 313818872291 CON BM V 26P F 2.0 68663
1681 242202516599 CON BM SIMM V 80P F 0.50 REV Y
1682 313818871931 CON BM H 14P M 2.0
1683 313818871931 CON BM H 14P M 2.0
1685 313818871921 CON BM H 26P M 2.0
1686 313816879501 WAFER 7P
1687 313816879511 CON JFE6338 8P VERT. ENTRY
1688 243803100343 CON BM H 3P M 2.54 2556 B
1689 242254290109 TUN V+U PLL IEG BG B
1900 313815853361 AMP.TR. ASSY
1901 823827711011 CON BM V 6P M 2.5 A2502WV2
1921 313816875191 7PIN WAFER 2.5MM PITCH
1931 243803100224 CON BM V 2P M 2.50 61142 B
1932 243803100099 CON BM V 2P M 2.50 63171 B
1942 313816876631 6P WAFER L TYPE (612661)
1943 313816877251 EARPHONE JACK
1944 313816877251 EARPHONE JACK
1986 313818872331 CON BM H 9P M 2.5 A2502WR2
1987 243812800196 SWI TACT H=5 GY 160G SKHHAM B
1988 243812800196 SWI TACT H=5 GY 160G SKHHAM B
1989 243812800196 SWI TACT H=5 GY 160G SKHHAM B
1990 243812800196 SWI TACT H=5 GY 160G SKHHAM B
1991 243812800196 SWI TACT H=5 GY 160G SKHHAM B
1992 243812800196 SWI TACT H=5 GY 160G SKHHAM B
1993 243812800196 SWI TACT H=5 GY 160G SKHHAM B
1995 313818872301 CON BM H 8P M 2.5 A2502WR2
1996 242212802864 SWI PUSH 2P 0.2A 30V ESB64 B
1997 243812800196 SWI TACT H=5 GY 160G SKHHAM B
1998 243812800196 SWI TACT H=5 GY 160G SKHHAM B
1999 242212802864 SWI PUSH 2P 0.2A 30V ESB64 B

1052 MAIN PCB ASSY

2001 223878615649 CER2 0603 X7R 16V 1N PM10 R
2006 203803516304 ELCAP RXJ 25V S 470U PM20 B
2007 223878615649 CER2 0603 X7R 16V 1N PM10 R
2008 203803516304 ELCAP RXJ 25V S 470U PM20 B
2009 203803516304 ELCAP RXJ 25V S 470U PM20 B
2016 223858615636 CER2 0603 X7R 50V 10N PM10 R
2017 203803516304 ELCAP RXJ 25V S 470U PM20 B
2018 223858615636 CER2 0603 X7R 50V 10N PM10 R
2019 223886715471 CER1 0603 NP0 50V 470P PM5 R
2020 202003100074 ELCAP KM 16V S 10U PM20 B
2021 202203100071 ELCAP SK 25V S 1U PM20 B
2022 202002191725 ELCAP SM RVS 16V S 10U PM20
2023 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2024 223878615649 CER2 0603 X7R 16V 1N PM10 R
2025 223886715471 CER1 0603 NP0 50V 470P PM5 R
2026 203803511605 ELCAP REA 63V S 1U PM20 B
2027 202203100071 ELCAP SK 25V S 1U PM20 B
2028 223824619863 CER2 0603 Y5V 10V 1U P8020 R
2029 223824619863 CER2 0603 Y5V 10V 1U P8020 R
2030 202203100071 ELCAP SK 25V S 1U PM20 B
2031 223858615636 CER2 0603 X7R 50V 10N PM10 R
2032 223878615649 CER2 0603 X7R 16V 1N PM10 R
2033 223824619863 CER2 0603 Y5V 10V 1U P8020 R
2034 223858615636 CER2 0603 X7R 50V 10N PM10 R
2035 223886715229 CER1 0603 NP0 50V 22P PM5 R
2036 223824619863 CER2 0603 Y5V 10V 1U P8020 R
2037 223858615623 CER2 0603 X7R 50V 1N PM10 R
2038 202001293723 ELCAP SM RV2 16V 47U PM20 R
2051 202001293723 ELCAP SM RV2 16V 47U PM20 R
2052 223878615649 CER2 0603 X7R 16V 1N PM10 R
2053 202001293723 ELCAP SM RV2 16V 47U PM20 R
2055 202001293721 ELCAP SM RV2 16V 10U PM20 R
2056 202001293721 ELCAP SM RV2 16V 10U PM20 R
2057 223878615649 CER2 0603 X7R 16V 1N PM10 R
2058 202001293723 ELCAP SM RV2 16V 47U PM20 R
2201 223886715159 CER1 0603 NP0 50V 15P PM5 R
2202 223886715159 CER1 0603 NP0 50V 15P PM5 R
2203 202002191725 ELCAP SM RVS 16V S 10U PM20
2205 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2206 223878615649 CER2 0603 X7R 16V 1N PM10 R
2207 223878615649 CER2 0603 X7R 16V 1N PM10 R
2211 223858615623 CER2 0603 X7R 50V 1N PM10 R
2212 223858615623 CER2 0603 X7R 50V 1N PM10 R
2213 223858615623 CER2 0603 X7R 50V 1N PM10 R
2215 223858615623 CER2 0603 X7R 50V 1N PM10 R
2216 223858615623 CER2 0603 X7R 50V 1N PM10 R
2217 223858615623 CER2 0603 X7R 50V 1N PM10 R
2218 223858615623 CER2 0603 X7R 50V 1N PM10 R
2301 223886715568 CER1 0603 NP0 50V 5P6 PM0P5 R
2302 223886715568 CER1 0603 NP0 50V 5P6 PM0P5 R
2303 223886715568 CER1 0603 NP0 50V 5P6 PM0P5 R
2305 223878615649 CER2 0603 X7R 16V 1N PM10 R
2306 223878615649 CER2 0603 X7R 16V 1N PM10 R
2311 223886715101 CER1 0603 NP0 50V 1P PM5 R
2312 223886715101 CER1 0603 NP0 50V 1P PM5 R
2316 223878615649 CER2 0603 X7R 16V 1N PM10 R
2320 223886715568 CER1 0603 NP0 50V 5P6 PM0P5 R
2321 223878615649 CER2 0603 X7R 16V 1N PM10 R
2322 223878615649 CER2 0603 X7R 16V 1N PM10 R
2326 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2327 223878615649 CER2 0603 X7R 16V 1N PM10 R
2328 223824619863 CER2 0603 Y5V 10V 1U P8020 R
2329 223878615649 CER2 0603 X7R 16V 1N PM10 R
2330 223878615649 CER2 0603 X7R 16V 1N PM10 R
2331 223878615649 CER2 0603 X7R 16V 1N PM10 R
2332 223878615649 CER2 0603 X7R 16V 1N PM10 R
2333 223878615649 CER2 0603 X7R 16V 1N PM10 R
2334 223878615649 CER2 0603 X7R 16V 1N PM10 R
2335 223878615649 CER2 0603 X7R 16V 1N PM10 R
2336 223878615649 CER2 0603 X7R 16V 1N PM10 R
2337 223878615649 CER2 0603 X7R 16V 1N PM10 R
2338 223878615649 CER2 0603 X7R 16V 1N PM10 R
2339 223878615649 CER2 0603 X7R 16V 1N PM10 R
2341 223878615649 CER2 0603 X7R 16V 1N PM10 R
2342 223858615623 CER2 0603 X7R 50V 1N PM10 R
2343 223878615649 CER2 0603 X7R 16V 1N PM10 R
2345 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2346 223878615649 CER2 0603 X7R 16V 1N PM10 R
2347 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2348 223878615649 CER2 0603 X7R 16V 1N PM10 R
2349 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2351 223878615649 CER2 0603 X7R 16V 1N PM10 R
2352 223878615649 CER2 0603 X7R 16V 1N PM10 R
2353 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2354 223878615649 CER2 0603 X7R 16V 1N PM10 R
2355 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2356 223858615623 CER2 0603 X7R 50V 1N PM10 R
2357 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2358 223858615623 CER2 0603 X7R 50V 1N PM10 R
2359 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2360 223858615623 CER2 0603 X7R 50V 1N PM10 R
2361 223858615623 CER2 0603 X7R 50V 1N PM10 R
2362 223878615649 CER2 0603 X7R 16V 1N PM10 R
2363 223878615649 CER2 0603 X7R 16V 1N PM10 R
2364 223878615649 CER2 0603 X7R 16V 1N PM10 R
2365 223878615649 CER2 0603 X7R 16V 1N PM10 R
2366 223878615649 CER2 0603 X7R 16V 1N PM10 R
2367 223878615649 CER2 0603 X7R 16V 1N PM10 R
2368 223878615649 CER2 0603 X7R 16V 1N PM10 R
2369 223878615649 CER2 0603 X7R 16V 1N PM10 R
2370 223878615649 CER2 0603 X7R 16V 1N PM10 R

Spare Parts List

2371 223878615649 CER2 0603 X7R 16V 1N PM10 R
2372 223878615649 CER2 0603 X7R 16V 1N PM10 R
2373 223878615649 CER2 0603 X7R 16V 1N PM10 R
2374 223878615649 CER2 0603 X7R 16V 1N PM10 R
2375 223878615649 CER2 0603 X7R 16V 1N PM10 R
2376 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2377 223878615649 CER2 0603 X7R 16V 1N PM10 R
2378 223878615649 CER2 0603 X7R 16V 1N PM10 R
2379 223878615649 CER2 0603 X7R 16V 1N PM10 R
2380 223878615649 CER2 0603 X7R 16V 1N PM10 R
2381 223878615649 CER2 0603 X7R 16V 1N PM10 R
2382 223878615649 CER2 0603 X7R 16V 1N PM10 R
2383 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2384 223878615649 CER2 0603 X7R 16V 1N PM10 R
2385 223878615649 CER2 0603 X7R 16V 1N PM10 R
2386 223878615649 CER2 0603 X7R 16V 1N PM10 R
2387 223878615649 CER2 0603 X7R 16V 1N PM10 R
2388 223878615649 CER2 0603 X7R 16V 1N PM10 R
2389 223878615649 CER2 0603 X7R 16V 1N PM10 R
2390 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2391 223878615649 CER2 0603 X7R 16V 1N PM10 R
2392 223878615649 CER2 0603 X7R 16V 1N PM10 R
2393 223878615649 CER2 0603 X7R 16V 1N PM10 R
2394 223878615649 CER2 0603 X7R 16V 1N PM10 R
2395 223878615649 CER2 0603 X7R 16V 1N PM10 R
2396 223878615649 CER2 0603 X7R 16V 1N PM10 R
2397 223878615649 CER2 0603 X7R 16V 1N PM10 R
2401 223878615645 CER2 0603 X7R 16V 47N PM10 R
2402 223878615645 CER2 0603 X7R 16V 47N PM10 R
2403 223878615645 CER2 0603 X7R 16V 47N PM10 R
2405 223878615645 CER2 0603 X7R 16V 47N PM10 R
2406 223878615645 CER2 0603 X7R 16V 47N PM10 R
2407 223886715159 CER1 0603 NP0 50V 15P PM5 R
2408 223878615645 CER2 0603 X7R 16V 47N PM10 R
2409 223886715159 CER1 0603 NP0 50V 15P PM5 R
2411 223878615645 CER2 0603 X7R 16V 47N PM10 R
2412 223886715159 CER1 0603 NP0 50V 15P PM5 R
2413 223878615645 CER2 0603 X7R 16V 47N PM10 R
2414 223824619863 CER2 0603 Y5V 10V 1U P8020 R
2415 223886715159 CER1 0603 NP0 50V 15P PM5 R
2416 223886714471 CER1 0603 NP0 50V 470P PM0P1 R
2417 203830200313 CAP MPOL 1V S 220N PM2 B
2418 223886714331 CER1 0603 NP0 50V 330P PM0P1 R
2419 223858615627 CER2 0603 X7R 50V 2N2 PM10 R
2421 223886715159 CER1 0603 NP0 50V 15P PM5 R
2422 223886715159 CER1 0603 NP0 50V 15P PM5 R
2426 223878615649 CER2 0603 X7R 16V 1N PM10 R
2427 223878615649 CER2 0603 X7R 16V 1N PM10 R
2428 223878615649 CER2 0603 X7R 16V 1N PM10 R
2429 223878615649 CER2 0603 X7R 16V 1N PM10 R
2431 223878615649 CER2 0603 X7R 16V 1N PM10 R
2432 223878615649 CER2 0603 X7R 16V 1N PM10 R
2433 202001293721 ELCAP SM RV2 16V 10U PM20 R
2435 223878615649 CER2 0603 X7R 16V 1N PM10 R
2436 223878615649 CER2 0603 X7R 16V 1N PM10 R
2437 202002191725 ELCAP SM RVS 16V S 10U PM20 R
2438 202002191725 ELCAP SM RVS 16V S 10U PM20 R
2441 223824619863 CER2 0603 Y5V 10V 1U P8020 R
2443 223824619863 CER2 0603 Y5V 10V 1U P8020 R
2446 223824619863 CER2 0603 Y5V 10V 1U P8020 R
2451 223878615649 CER2 0603 X7R 16V 1N PM10 R
2452 202002191725 ELCAP SM RVS 16V S 10U PM20 R
2453 222224119876 CER2 1206 Y5V 10V 10U P8020 R
2456 202002191725 ELCAP SM RVS 16V S 10U PM20 R
2457 223878615649 CER2 0603 X7R 16V 1N PM10 R
2458 223878615649 CER2 0603 X7R 16V 1N PM10 R
2459 223878615649 CER2 0603 X7R 16V 1N PM10 R
2461 223878615649 CER2 0603 X7R 16V 1N PM10 R
2462 223878615649 CER2 0603 X7R 16V 1N PM10 R
2463 223878615649 CER2 0603 X7R 16V 1N PM10 R
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5203 313816874261 TI321611G8-SMD
5301 313816874261 TI321611G8-SMD
5303 313816874261 TI321611G8-SMD
5306 313816874261 TI321611G8-SMD
5308 313816874261 TI321611G8-SMD
5311 313816874261 TI321611G8-SMD
5312 313816874261 TI321611G8-SMD
5321 313816874261 TI321611G8-SMD
5331 313816874261 TI321611G8-SMD
5335 313816874261 TI321611G8-SMD
5336 313816874261 TI321611G8-SMD
5337 313816874261 TI321611G8-SMD
5338 313816874261 TI321611G8-SMD
5339 313816874261 TI321611G8-SMD
5341 313816874261 TI321611G8-SMD
5342 313816874261 TI321611G8-SMD
5343 313816874261 TI321611G8-SMD
5361 313816874261 TI321611G8-SMD
5362 313816874261 TI321611G8-SMD
5363 313816874261 TI321611G8-SMD
5375 313816874261 TI321611G8-SMD
5421 313816874261 TI321611G8-SMD
5422 313816874261 TI321611G8-SMD
5423 313816874261 TI321611G8-SMD
5426 313816874261 TI321611G8-SMD
5451 313816874261 TI321611G8-SMD
5456 313816874261 TI321611G8-SMD
5457 313816874261 TI321611G8-SMD
5471 313816874261 TI321611G8-SMD
5611 242253595853 IND FXD SM 0603 0U10 PM10 R
5612 242253595853 IND FXD SM 0603 0U10 PM10 R
5613 242253595853 IND FXD SM 0603 0U10 PM10 R
5615 242253595853 IND FXD SM 0603 0U10 PM10 R
5616 242253595853 IND FXD SM 0603 0U10 PM10 R
5631 242253595853 IND FXD SM 0603 0U10 PM10 R
5632 242253595853 IND FXD SM 0603 0U10 PM10 R
5681 313816874261 TI321611G8-SMD
5682 313816874261 TI321611G8-SMD
5901 242253594329 IND FXD SPT0203 A 22U PM5 A
5911 242253594329 IND FXD SPT0203 A 22U PM5 A
5941 242253600036 IND FXD TSL0808 S 1U PM10 A

6001 933770370215 DIO REG SM BZX84-B12 (PHSE)
6006 932208282668 DIO REC SM SS34 (GI) R
6019 933913910115 DIO SIG SM BAS32L (PHSE) R
6020 933913910115 DIO SIG SM BAS32L (PHSE) R
6021 933952580685 DIO SIG SM BAV103 (TEG0) R
6022 933770460215 DIO REG SM BZX84-B33 (PHSE)
6023 933137400215 DIO REG SM BZX84-C5V6(PHSE)
6025 933913910115 DIO SIG SM BAS32L (PHSE) R
6026 933913910115 DIO SIG SM BAS32L (PHSE) R
6027 933913910115 DIO SIG SM BAS32L (PHSE) R
6028 933913910115 DIO SIG SM BAS32L (PHSE) R
6031 933913910115 DIO SIG SM BAS32L (PHSE) R
6301 933913910115 DIO SIG SM BAS32L (PHSE) R
6302 933913910115 DIO SIG SM BAS32L (PHSE) R
6311 319801010620 DIO SIG SM BAV99 (COL) R
6312 319801010620 DIO SIG SM BAV99 (COL) R
6313 319801010620 DIO SIG SM BAV99 (COL) R
6315 319801010620 DIO SIG SM BAV99 (COL) R
6316 933137380215 DIO REG SM BZX84-C4V7 (PHSE)
6317 933913910115 DIO SIG SM BAS32L (PHSE) R
6411 933913910115 DIO SIG SM BAS32L (PHSE) R
6412 933913910115 DIO SIG SM BAS32L (PHSE) R
6601 319801010620 DIO SIG SM BAV99 (COL) R
6602 319801010620 DIO SIG SM BAV99 (COL) R
6603 319801010620 DIO SIG SM BAV99 (COL) R
6604 319801010620 DIO SIG SM BAV99 (COL) R
6605 319801010620 DIO SIG SM BAV99 (COL) R
6606 319801010620 DIO SIG SM BAV99 (COL) R
6607 319801010620 DIO SIG SM BAV99 (COL) R
6608 319801010620 DIO SIG SM BAV99 (COL) R
6609 319801010620 DIO SIG SM BAV99 (COL) R
6610 319801010620 DIO SIG SM BAV99 (COL) R
6611 319801010620 DIO SIG SM BAV99 (COL) R
6612 933952580685 DIO SIG SM BAV103 (TEG0) R
6613 933137380215 DIO REG SM BZX84-C4V7 (PHSE)
6631 319801010620 DIO SIG SM BAV99 (COL) R
6632 319801010620 DIO SIG SM BAV99 (COL) R
6633 319801010620 DIO SIG SM BAV99 (COL) R
6635 319801010620 DIO SIG SM BAV99 (COL) R
6636 319801010620 DIO SIG SM BAV99 (COL) R
6637 319801010620 DIO SIG SM BAV99 (COL) R
6682 319801010630 DIO SIG SM BAS316 (COL) R
6991 932217552682 LED VS L-44SGC (KIEL) B
6992 932217552682 LED VS L-44SGC (KIEL) B
6993 932217552682 LED VS L-44SGC (KIEL) B
6994 932213169687 IR RECEIVER TSOP1836SS3V(TEG)L

7005 932215923668 IC SM LM2596SX-5.0 (NSC0) R
7011 932211529668 FET POW SM SI9433DY (TEG0)
7012 933967310685 TRA SIG SM BC848C (ONSE) R
7013 933967310685 TRA SIG SM BC848C (ONSE) R
7016 932217562687 IC SM LD1085D2T33 (ST) L
7017 932211529668 FET POW SM SI9433DY (TEG0)
7018 933967310685 TRA SIG SM BC848C (ONSE) R
7021 932216888668 IC SM LM317D2T (ST) R
7022 932216733668 IC SM LD1117S33 (ST) R
7023 933967310685 TRA SIG SM BC848C (ONSE) R
7024 933967310685 TRA SIG SM BC848C (ONSE) R
7025 934000540115 FET SIG SM BSP126 (PHSE) R
7026 932217564687 IC SM L7805CD2T (ST) L
7027 932217564687 IC SM L7805CD2T (ST) L
7028 933967310685 TRA SIG SM BC848C (ONSE) R
7030 932217563685 IC L78L05ACU (ST) R
7031 933507970653 IC SM HEF4538BT (PHSE) R
7032 933967310685 TRA SIG SM BC848C (ONSE) R
7033 933967310685 TRA SIG SM BC848C (ONSE) R
7035 933373070653 IC SM HEF4077BT (PHSE) R
7036 933967310685 TRA SIG SM BC848C (ONSE) R
7037 933967310685 TRA SIG SM BC848C (ONSE) R
7038 933967310685 TRA SIG SM BC848C (ONSE) R
7039 933967310685 TRA SIG SM BC848C (ONSE) R
7051 932216888668 IC SM LM317D2T (ST) R

Spare Parts List

7052	932216732668	IC SM LD1117S25 (ST) R
7201	935256600112	IC SM P80C51RA+4A (PHSE) L
7202	932212662682	IC M24C16-BN6 (ST) L
7203	932217680682	IC M29F010B-90P1 (ST) L
7205	935218650118	IC SM 74LVC373APW (PHSE) R
7206	932216554668	IC SM 74LCX139T (ST) R
7301	932214526668	IC SM M24C02-WMN6 (ST) R
7321	935260739118	IC SM 74LVC14APW (PHSE) R
7322	932217743685	IC SM LM810M3-4.0 (NSC0) R
7323	933714830653	IC SM 74HC4052D (PHSE) R
7331	823827709181	SCALER
7351	933967310685	TRA SIG SM BC848C (ONSE) R
7361	932216677682	IC SM M12L16161A-7T (ESMT) L
7362	932216677682	IC SM M12L16161A-7T (ESMT) L
7363	932216677682	IC SM M12L16161A-7T (ESMT) L
7401	935267395518	IC SM SAA7118E/V1 (PHSE) R
7402	933967310685	TRA SIG SM BC848C (ONSE) R
7403	933967310685	TRA SIG SM BC848C (ONSE) R
7405	933967310685	TRA SIG SM BC848C (ONSE) R
7406	933967310685	TRA SIG SM BC848C (ONSE) R
7407	933967310685	TRA SIG SM BC848C (ONSE) R
7408	933967310685	TRA SIG SM BC848C (ONSE) R
7409	933967310685	TRA SIG SM BC848C (ONSE) R
7410	935209280118	IC SM 74LVT86D (PHSE) R
7411	319801043360	TRA SIG SM PMBT2369 (COL) R
7412	319801043360	TRA SIG SM PMBT2369 (COL) R
7413	319801043360	TRA SIG SM PMBT2369 (COL) R
7415	319801043360	TRA SIG SM PMBT2369 (COL) R
7431	932216733668	IC SM LD1117S33 (ST) R
7451	823827709161	DE-INTERLACER IC
7471	932217603668	IC SM K4S643232E-TC50 (SMGK)
7621	933967310685	TRA SIG SM BC848C (ONSE) R
7901	935172510112	IC TDA1308/N1 (PHSE) L
7902	933553530676	TRA SIG TBC548C (TOSJ) A
7911	933553530676	TRA SIG TBC548C (TOSJ) A
7912	933773860676	TRA SIG TBC558C (TOSJ) A
7921	933553530676	TRA SIG TBC548C (TOSJ) A
7931	935261847112	IC TDA1517/N3 (PHSE) L
7932	933553530676	TRA SIG TBC548C (TOSJ) A
7935	933553530676	TRA SIG TBC548C (TOSJ) A
7936	933553530676	TRA SIG TBC548C (TOSJ) A
7937	933773860676	TRA SIG TBC558C (TOSJ) A
7991	933553530676	TRA SIG TBC548C (TOSJ) A
7992	933553530676	TRA SIG TBC548C (TOSJ) A
7996	933510720686	IC MC78L05ACP (MOTA) R
7997	933553530676	TRA SIG TBC548C (TOSJ) A

PHILIPS

GENERAL PRODUCT SPECIFICATION

. 15 LCD monitor with TV function.

. PC 15 pins D-SUB analog interface.

. TV Tuner, S-Video with L/R RCA Audio in.
SCART (RGB, AV) input interface (for Europe model)
Cinch input (YUV, AV) input interface (for NAFTA , AP model)

. PC audio line in, and headphone out interface

. L/R audio line output.

. NTSC, PAL, SECAM TV system.

. 100 Pages Teletext (Europe) and Closed caption, V-chip(NAFTA)

. Video on PC graphic picture in picture feature

. PC graphic auto picture adjustment

. 14 user modes

. User friendly OSD menu

. User friendly remote controller

. DDC2B communication capability

. MAX. resolution 1024 x 768 non-interlace at 75 Hz

. XGA 15 color TFT LCD flat panel

. Easy tilt and swivel base

. Full range power supply adapter 90 264 VAC

. CE environmental policy

. Anti-glare to reduce light reflection

. Power management capability

. TCO 95 (Option)

. VESA standard wall mount kit (option)

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PHILIPS

CONTENTS

1.0 Foreword

2.0 Product profile
2.1 LCD
2.2 Scanning frequencies
2.3 Video dot rate
2.4 Power input
2.5 Power consumption
2.6 Dimensions
2.7 Weight
2.8 Functions
2.9 Ambient temperature
2.10 Regulatory compliance

3.0 Electrical characteristics
3.1 Interface signals cables
3.2 User interface
3.2.1 Front control panel
3.2.2 Front control panel definition
3.2.3 PC signal control via front key
3.2.4 TV signal control via front key and RC control
3.2.4.1 Remote control function
3.2.4.2 Remote control key definition
3.2.4.3 TV OSD control function
3.2.5 PC signal timing requirement and TV system requirement
3.2.6 PC interface
3.2.6.1 Mode storing capacity
3.2.6.2 Available timings
3.2.6.3 Horizontal scanning
3.2.6.4 Vertical scanning
3.3.2 TV interface

3.4 Power input connection
3.5 Power management
3.6 Display identification

4.0 Visual characteristics
4.1 Test conditions
4.2 Resolution
4.3 Brightness

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CLASS NO.

15"TFT XGA LCD Monitor / TV
TYPE : 150MT10P/00C
BRAND : PHILIPS

8639 000 11717

2001-10-02

NAME K.C Chien | SUPERS. | 36 | 590 — 2 | 10 | A4

TY | CHECK | DATE 2001-10-02 | Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.

4.4 Image size
4.4.1 Actual display size
4.5 Brightness uniformity
4.6 PC white color adjustment
4.7 TV white color adjustment
4.8 TV picture centering

5.0 Mechanical characteristics
5.1 Controls
5.2 Unit dimension / weight
5.3 Tilt and swivel base
5.4 Transportation packages
5.4.1 Shipping dimension / weight
5.4.2 Block unit / palletization

6.0 Environmental characteristics
6.1 Susceptibility of display to external environment
6.2 Transportation tests
6.3 Display disturbances from external environment

7.0 Reliability
7.1 Mean time between failures
8.0 Quality assurance requirements
8.1 Acceptance test
9.0 Serviceability

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1.0 FOREWORD

This specification describes a 15" XGA multiscan color TFT LCD Monitor/TV with max. resolution up to 1024x768/75Hz non-interlaced.

2.0 PRODUCT PROFILE

Philips 15 TFT LCD monitor/TV can connect to PC with analog D-SUB, and has TV, Video interface with integrated base.

Meet word wide five major TV system:
West Europe, East Europe, NAFTA, Asia Pacific and China.

2.1 LCD

Type NR.	: CLAA150XE01
Dimensions	: 15
Pitch (mm)	: 0.297mm
Color pixel arrangement	: RGB vertical stripes
Display surface	: Antiglare
Number of color	: 16.7M (8 bits / color)
Backlight	: 4 CCFL edgelight (upper / down)system
Active area(WxH)	: 304.1mmx228.1mm
Viewing angle	: CR>=10
	Typical : Vertical : -70 ~ 50 , Horizontal : -70 ~ 70
	: CR>= 5
	Typical : Vertical : -75 ~ 60 , Horizontal : -75 ~ 75
Contrast ratio	: Typical 500 .
Luminance of white	: Typical 300 Nits.

2.2 Scanning frequencies
Hor. : 30 - 61KHz Ver. : 56 - 75 Hz

2.3 Video dot rate : <80 MHz

2.4 Power input : 90 - 264 Vac, 50/60 2 Hz
: Adapter 12 +/- 1V 4.5A output

2.5 Power consumption : typ 48 W

2.6 Dimensions : 391mm W X 366mm H X 200mm D

2.7 Weight : 5.1 Kg

2.8 Functions :

15 pins D-sub analog interface.
Tuner, S-video (video and RCA audio jack), SCART (Europe model) , Cinch (NAFTA , AP model) , PC audio line in input , Headphone output interface
And line out.

2.9 Ambient temperature : 0 - 35 C

2.10 Regulatory compliance :

FCC, EPA, UL, CSA, TUV/GS, TUV/ERG, CE, C-Tick, SEMKO, TCO95, Nutek, MPRII, BSMI, PSB, CB,PZ1, ISO13406-2.
EN60950/IEC60950, EN60065/IEC60065,
EN55013, EN55020, EN55022, EN55024, EN60555-2, EN61000-3-2

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3.0 Electrical characteristics

3.1 Interface signals cables

VGA Interface Cable (for all model)
Length : 1.8 M +/- 50 mm

Stereo RCA audio cable (option)
Length : 1.5 M +/- 50 mm

S-video cable (option)
Length : 1.5 M +/- 50 mm

SCART cable (option)
Length : 1.5 M +/- 50 mm

YCbCr cable (option)
Length : 1.5M +/- 50 mm

AV cable (option)
Length : 1.5M +/- 50 mm

Mini Jack stereo cable(for all model)
Length : 1.5 M +/- 50 mm

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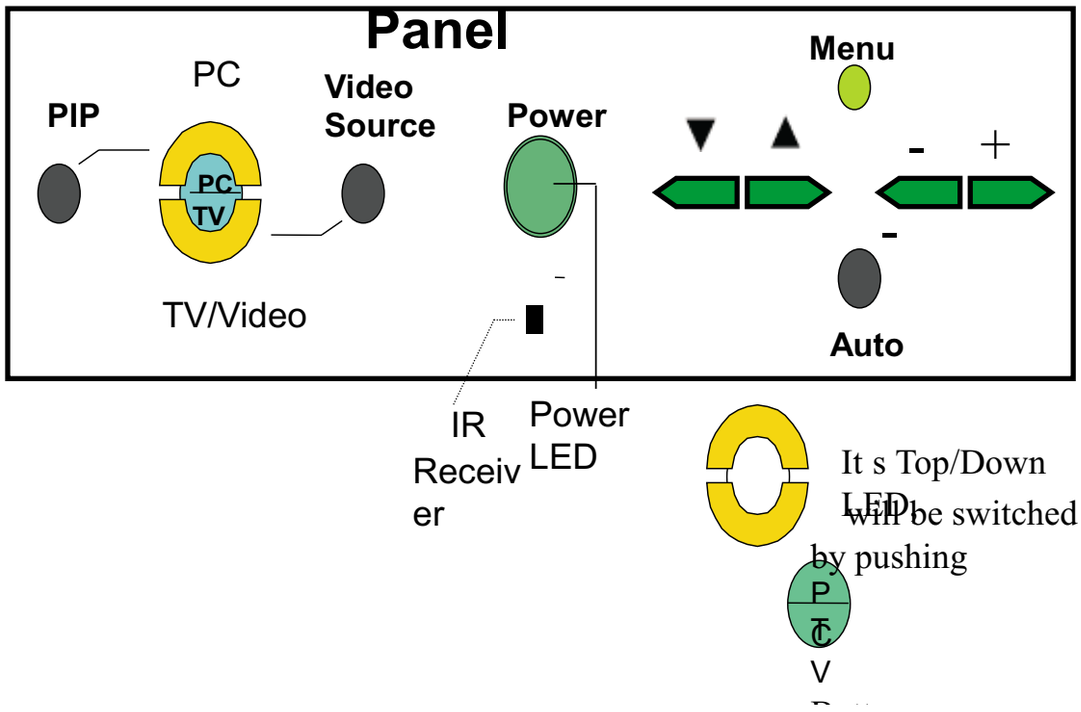
3.1 User interface
On screen display user control via front keypad (PC and TV OSD) and remote control for TV.

3.2.1 Front control panel

Front Control Panel



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3.2.2 Front control panel definition :

PIP : PIP enable/disable and size select (active in PC mode).
PC/TV : PC/TV select key.
PC/TV LED: PC/TV status.
Video Source : AV source select key.
Power: Power switch.
Power LED: Normal operationgreen. Sleeping modegreen with blanking.
IR receiver.
-CH-: Channel up and down, and OSD cursor up and down.
-Vol-: Volume up and down, and OSD cursor left and right
Auto : Auto adjust PC H,V size and position and video phase and clock.
Menu: Enable OSD menu(enter key for PC).

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3.2.3 PC Signal control via front keyboard:

Language : ENGLISH , ESPANOL , FRANCAIS , DEUTSCH , ITALIANO

Adjust position: H-position, V-position.

Brightness and contrast: Lamps brightness and PC graphic contrast adjustment.

Video noise : Phase adjustment, Clock adjustment

Adjust color : Original panel color ,
9300K for CAD/CAM use
6500k for image management,
User color red, green and blue color adjustable.

OSD settings : OSD H,V position settings

Product information : Serial number and timing information

Rest to factory setting : Reset brightness, contrast, positions, phase, clock to factory settings.

Picture in picture : Enable picture in picture feature.
Adjust PIP size and position.
Select the PIP audio source.

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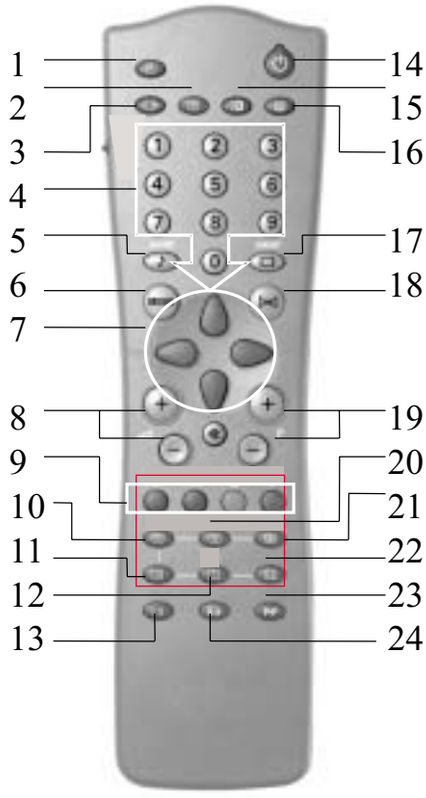
3.2.4 TV Signal control via front keyboard and RC control:

3.2.4.1 Remote control function

1. PIP On/Off/Size
2. PIP Position
3. AV source
4. Digit(0-9)
5. Smart Sound
6. Menu
7. Cursor move
8. Volume + / -
9. Teletext access
10. On/Off Teletext
11. Mix
12. Reveal/Conceal
13. I-II



14. standby
(Power ON/Off in US)
Standby
15. Timer
16. Program List
17. Smart Picture
18. PC/TV
19. Channel + / -
20. Enlarge
21. Hold
22. OSD / Main Index
23. Alternate Channel
24. Closed Caption
(Disable in EU/AP)

Disable buttons in US

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3.2.4.2 Remote control key definition

1. PIP On/Off and size
2. PIP position
3. Press source select key to select EXT, S-Video and TV(AV,CVI, S-Video and TV for Naft
4. Digital number: For direct access to programs .For a 2 digit program number, the 2nd digit must be entered before the dash disappears.
5. Smart sound: To access a series of settings: VOICE, MUSIC, THEATRE and return to PERSONAL
6. Menu: To display or exit from the menus
7. Cursor: These 4 keys are used to move within the menus
   Mute : To disable or enable the sound.
8. Volume: To adjust the sound level
9. Teletext Access: Coloured zones are displayed at the bottom of the screen. The 4 coloured keys give access to the corresponding subjects or pages.(Disable in Nafta)
   The coloured zones flash when the subject or the page is not yet available.
10. On/off teletext: To call up or exit from teletext. When first pressed, the main index page appears with a list of the items available. Each page has a corresponding 3-figure number. If the selected channel does not broadcast teletext, 100 will appear and the screen will remain blank (in this case, exit from teletext and choose another channel). (Disable in NAFTA)
11. Mix: Overlaying text on the TV picture To activate or deactivate screen overlay.
12. Reveal/Conceal: Use this key to reveal/conceal hidden information (answers to puzzles). (Disable in NAFTA)
13. I-II: Double page teletext
    To activate or deactivate the double page teletext display mode.The active page is displayed on the left and the following page is displayed on the right. Press hold if you want to hold a page (i.e. the contents page). The active page is then displayed on the right. To return to normal mode. Press I-II. Stereo, Mono, Sap sound select.
14. Standby(power on/off key in US): To set the TV to standby mode. To switch the TV set on again press P -/+ or 0..9.
15. Timer: To select the length of time before the set automatically switches to standby (from 0 to 240 minutes)
16. Program list: To display/clear the list of programs. Use the keys up down select a program and the key right display it. The symbol locked is displayed alongside all program which are locked. or unlocked symbol means if they are not locked.
17. Smart picture: To access a series of settings: RICH, NATURAL, SOFT, MULTIMEDIA and return to PERSONAL.
    (Movies, sports, weak signal, multimedia and personal setting for Nafta)
18. PC/TV: PC /TV function select key.
19. Channel +/-
20. Enlarge: Page enlargement Press this key to display the upper, then lower part of the screen, and then to return to the normal page size. (Disable in NAFTA)
21. Hold :Hold a Page. (Disable in NAFTA)
22. OSD/Main index: Screen information To display / remove the program number, the name (if it exists), the time, the sound mode and the time remaining on the

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timer. Hold down for 5 seconds to permanently display the programme number on the screen. The volume level and the smart control adjustments are then displayed each time they are used.

23. Alternate channel: To access the previously viewed program
24. Close caption: Closed caption selection. (disable in EE/WE/AP/CN)

3.2.4.3 TV OSD control function

Auto install

For Europe:

The first time you switch on the television,
use the auto store function in the OSD to start the tuning.
The operation takes several minutes.
A display shows the search status and the
number of programs found. When it has
finished the menu disappears.
To exit or interrupt the search, press the menu key.
1. If the transmitter or the cable network
broadcasts the automatic sort signal, the
programs will be correctly numbered.
2 If not, the programs found will be
numbered in descending order starting at 99,
98, 97, etc.
Use the SORT menu to renumber them.
Some transmitters or cable networks broadcast
their own sort parameters (region, language, etc.).
Where this is the case, make your choice using the
Up down keys and confirm with right key.

For Nafta:
Select the tuner mode in OSD menu for cable, antenna or auto select.
Use the auto program function to search channel.

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Sort the programs

For Europe:

1. Press the menu key. The main menu is displayed.
2 Select INSTALL (down key), then press right key.
The INSTALL menu appears.
3 Using the down key, select SORT then press right key.
The SORT menu appears. The FROM option is activated.
Note: this menu works as follows:
Change "FROM" (enter the current program number),
"TO" (enter the new number),
EXCHANGE numbers" (the operation is carried out).
4. Select the program you wish to renumber using left right keys or 0 to 9.
Example: to renumber program 78 as 2 press 78.
(Select TO (using down key) and enter the new number with left right keys or 0 to 9(for the example given, enter 2).
6. Select EXCHANGE (down key) and press right.
The message EXCHANGED appears, the exchange takes place. In our example, program 78 is renumbered as 2 (and program 2 as 78).
7. Select the option FROM (up key) and repeat stages 4 to 6 as many times as there are programs to renumber.
8. To exit from the menus, press OSD key.

For Nafta:
Use Channel edit function to skip or enable the channel

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Manual tuning

For Europe:

This menu allows you to store the programs one by one.
1. Press menu.
2. Select INSTALL (down), then press right.
The INSTALL menu appears.
3. Select MANUAL STORE (down) then press right.
The menu appears :
4. Press right to go to the SYSTEM menu.
Use up down to choose EUROPE (automatic detection*) or manual detection with WEST EUR (standard BG reception), EAST EUR (standard DK reception), UK (standard I reception) or FRANCE (standard LL').
Then press left to exit from the menu.
* Except for France (standard LL'): select the option FRANCE.
5. Select SEARCH and press right.
The search begins. As soon as a program is found, the search will stop. If you know the frequency of the program required, enter its number directly using the 0.9 keys and go to step 7.
6. If reception is un-satisfactory, select FINE TUNE and hold down left or right key.
7. Select PROG. NO (program number) and use the left right or 0 to 9 keys to enter the desired number.
8. Select STORE and press right. The message STORED appears. The program is stored.
9. Repeat steps 5 to 8 for each program to be stored.
To exit: press the OSD key.

For Nafta:
Manual function allows user to fine tune the frequency.

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PHILIPS

Automatic tuning

For Europe:

This menu allows you to automatically search for all the programs available in your region (or on your cable network).
1. First carry out operations 1to 8 above, then:
2 Press down once to select AUTO STORE then press right. The search begins.
After several minutes, the INSTALL menu reappears automatically.
3. If the transmitter or the cable network broadcasts the automatic sort signal, the programs will be correctly numbered.
4. If not, the programs found will be numbered in descending order starting at 99, 98, 97, etc.
Use the SORT menu to renumber them.
Some transmitters or cable networks broadcast their own sort parameters (region, language, etc.).
Where this is the case, make your choice using the Up down keys and confirm with right.
To exit or interrupt the search, press the menu key.
6. To exit from the menus, press OSD.

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PHILIPS

Manual tuning

For Europe:

This menu allows you to store the programs one by one.
1. Press menu.
2. Select INSTALL (down), then press right.
The INSTALL menu appears.
3. Select MANUAL STORE (down) then press right.
The menu appears :
4. Press right to go to the SYSTEM menu.
Use up down to choose EUROPE (automatic detection*) or manual detection with WEST EUR (standard BG reception), EAST EUR (standard DK reception), UK (standard I reception) or FRANCE (standard LL').
Then press left to exit from the menu.
* Except for France (standard LL'): select the option FRANCE.
5. Select SEARCH and press right.
The search begins. As soon as a program is found, the search will stop. If you know the frequency of the program required, enter its number directly using the 0.9 keys and go to step 7.
6. If reception is un-satisfactory, select FINE TUNE and hold down left or right key.
7. Select PROG. NO (program number) and use the left right or 0 to 9 keys to enter the desired number.
8. Select STORE and press right. The message STORED appears. The program is stored.
9. Repeat steps 5 to 8 for each program to be stored.
To exit: press the OSD key.

For Nafta:
Manual function allows user to fine tune the frequency.

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PHILIPS

Program Name

You may, if you wish, give a name to the first
40 programs (from 1 to 40).
1. Press menu.
2. Select INSTALL (down), then press right.
The INSTALL menu appears.
3. Press down 5 times to select NAME (concealed
at the bottom of the screen), then press right.
The menu appears :
4. Select the program you wish to name using the keys 0.9 or - P +.
Note: at the time of installation, the programs
are automatically named when the identification signal is transmitted.
5. Use the keys left right to move within the name
display area (5 characters).
6. Use keys up down to choose the characters.
7. Press menu when the name has been entered.
The program name is stored.
8. Repeat steps 4 to 7 for each program to
be named.
9 To exit from the menus, press OSD.

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PHILIPS

Adjust the picture

1. Press menu then right. The PICTURE menu appears :
2. Use up down keys to select a setting and left right keys to adjust.
Note: the menu is a scroll-down menu.
Keep the key down held down to access the settings
hidden at the bottom of the screen.
3 Once the necessary adjustments have been
made, select the option STORE and press right
to store them.
4 To exit from the menus, press menu.
Description of the settings:
BRIGHTNESS: alters the brightness of the image.
COLOUR: alters the color intensity.
CONTRAST(PICTURE at Nafta): alters the variation between light and dark tones.
SHARPNESS: alters the crispness of the image.
STORE: stores the picture settings.(No this function in Nafta)
TINT: Alters the skin color.(No this function in PAL)
COLOUR TEMP (color temperature):
adjusts the color temperature of the
picture. Three options are available here:
COOL (blue white), NORMAL (balanced) or WARM (red white).
IMAGEMAX: Enhance the picture contrast.(No this function at Europe)

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PHILIPS

Adjust the sound

1 Press menu, select the SOUND function (down key) and press right key. The SOUND menu appears :
2. Use up down keys to select a setting and left right keys to adjust.
Note: to access the AVL setting (hidden at the bottom of the screen) hold down down key.
3. Once the necessary adjustments have been made, select the option STORE and press right to store them.
4. To exit from the menus, press OSD key.
Description of the settings:
TREBLE: alters the level of the high frequency sound.
BASS: alters the level of the low frequency sound.
BALANCE: to balance the sound between the left and right speakers.
DELTA VOLUME (volume difference): allows you to compensate for the volume differences between the different programs or the EXT inputs. This setting is available for programs 1 - 40 and the EXT sockets. (for Eurpoe)
STORE: stores the sound settings.
AVL (Automatic Volume Leveller): automatic volume control used to avoid sudden increases in volume, particularly when changing programs or during advertisements

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Timer Function

This menu allows you to use your TV as an alarm clock.
1. Press menu.
2 Select FEATURES (down) and press right twice.
The TIMER menu appears :
3. Press right to enter and exit the sub-menus and
use keys up down to adjust:
4. TIME: enter current time.
Note: the time is updated automatically each time
the set is switched on using teletext information
taken from program 1. If program 1 does
not have teletext, the update will not take place.
5. START TIME: enter the start time.
6. STOP TIME: enter the stop time.
7. PROG; NO;: enter the number of the program required.
8. ACTIVATE: you can set the alarm to be activated:
ONCE ONLY for a one-off alarm,
DAILY for a daily alarm or
STOP to cancel.
9. Press standby to set the TV to standby. It will
automatically switch on at the time
programmed. If you leave the TV switched on,
it will only change program at the time indicated.
The combination of the CHILD LOCK and TIMER
functions may be used to limit the length of time
your television is in use, for example, by your children.

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PHILIPS

Locking Set

For Europe:

You can bar access to certain programs or completely lock the set by locking the keys.

Locking programs

1. Press menu.
2. Select FEATURES (down) and press right.
3. Select PARENTAL. CONT. (down) and press right.
4. Enter your confidential access code. The first time, enter the code 0711 then confirm by re-entering 0711.The menu appears.
5. Press right to go into the menu.
6. Use keys up down to select the required program and confirm with right. The symbol is displayed alongside the programs or sockets that have been locked.
Press OSD to exit.

To watch a program which has been locked

You will now need to enter the confidential code; otherwise the screen will remain blank.
The INSTALL menu access is also locked.
Caution: in the case of encrypted programs which use an external decoder, it is necessary to lock the corresponding EXT socket.

To unlock all programs

Repeat stages 1 to 4 above, then select CLEAR ALL and press right.
To change the confidential code
Repeat stages 1 to 4 above, then:
5. Select CHANGE CODE and enter your own 4-digit number.
6. Confirm by entering it again.
Your new code will be stored.
7. Press OSD to exit from the menus.
If you have forgotten your confidential code, enter the universal code 0711 twice.

Locking the keys

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1. Press menu, select FEATURES (down) and press right.
2. Select CHILD LOCK (down) and press right to set the lock to ON.
3. Switch off the set and put the remote control out of sight.
The set cannot be used (it can only be
switched on using the remote control).
4. To cancel: switch CHILD LOCK to OFF.

For Nafta:
The universal code is same as Europe .
Use auto lock function to select V-chip function.
Use Closed Cap to select caption mode.

3.3 PC signal timing requirement and TV system requirement

3.3.1 PC interface

3.3.1.1 Mode storing capacity

User modes : 14

3.3.1.2 Available timings

Factory pre-set timing, size and centering are according to the reference timing charts.

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PHILIPS

MODE NO.	1	* 2	* 3	4
RESOLUTION	640 x 350	720 x 400	640 x 480	640x480
Dot clock(MHz)	25.175	28.321	25.175	30.240
f h	31.469kHz	31.469kHz	31.469kHz	35.0kHz
A (us)	31.78(800 dots)	31.78(900dots)	31.778 (800 dots)	28.571(864 dots)
B (us)	3.813(96 dots)	3.813(108dots)	3.813 (96 dots)	2.116(64 dots)
C (us)	1.907(48 dots)	1.907(54dots)	1.907 (48 dots)	3.175(96 dots)
D (us)	25.42(640 dots)	25.42(720dots)	25.422 (640 dots)	21.164(640 dots)
E (us)	0.636(16 dots)	0.636(18dots)	0.636 (16 dots)	2.116(64 dots)
f v	70Hz(70.09)	70Hz(70.087)	60Hz (59.940)	66.7 HZ(66.667
O (ms)	14.27(449 lines)	14.27(449 lines)	16.683 (525 lines)	15.000(525 lines)
P (ms)	0.064(2 lines)	0.064(2 lines)	0.064 (2 lines)	0.086(3 lines)
Q (ms)	1.875(59 lines)	1.080(34 lines)	1.049 (33 lines)	1.114(39 lines)
R (ms)	11.12(350 lines)	12.71(400 lines)	15.253 (480 lines)	13.714(480 lines)
S (ms)	1.208(38 lines)	0.413(13 lines)	0.317 (10 lines)	0.086(3 lines)
SYNC. H/V POLARITY	+/-	-/+	- / -	+/+ Or -/-
SEP . SYNC	Y	Y	Y	Y

MODE NO.	5	* 6	7	8
RESOLUTION	640 x 480	640 x 480	800 x 600	800 x 600
Dot clock(MHz)	31.500	31.500	36.000	40.000
f h	37.861kHz	37.500kHz	35.156kHz	37.879kHz
A (us)	26.413(832 dots)	26.667 (840 dots)	28.44 (1024 dots)	26.40 (1056 dots)
B (us)	1.270(40 dots)	2.032 (64 dots)	2.000 (72 dots)	3.200 (128 dots)
C (us)	4.064(128 dots)	3.810 (120 dots)	3.556 (128 dots)	2.200 (88 dots)
D (us)	20.317(640 dots)	20.317 (640 dots)	22.22 (800 dots)	20.00 (800 dots)
E (us)	0.508(16 dots)	0.508 (16 dots)	0.667 (24 dots)	1.000 (40 dots)
f v	72.809Hz	75Hz (75)	56Hz (56.25)	60Hz (60.316)
O (ms)	13.735(520 lines)	13.333 (500 lines)	17.78 (625 lines)	16.58 (628 lines)
P (ms)	0.079(3 lines)	0.080 (3 lines)	0.057 (2 lines)	0.106 (4 lines)
Q (ms)	0.739(28 lines)	0.427 (16 lines)	0.626 (22 lines)	0.607 (23 lines)
R (ms)	12.678(480 lines)	12.80 (480 lines)	17.07 (600 lines)	15.84 (600 lines)
S (ms)	0.023(1 lines)	0.027 (1 line)	0.028 (1 line)	0.026 (1 line)
SYNC. H/V POLARITY	-/-	- / -	+ / +	+ / +
SEP . SYNC	Y	Y	Y	Y

A : H-Total
B : H- Sync width
C : H- Back porch
D : H- Video width
E : H- Front porch

O : V-Total
P : V- Sync width
Q :.V- Back porch
R : V- Video length
S :.V- Front porch

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CLASS NO.

15"TFT XGA LCD Monitor / TV
TYPE : 150MT10P/00C
BRAND : PHILIPS

8639 000 11717

2001-10-02

NAME K.C Chien | SUPERS. | 36 | 590 — 22 | 10 | A4

TY | CHECK | DATE 2001-10-02 | Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.

PHILIPS

MODE NO.	9	* 10	11	* 12
RESOLUTION	800 x 600	800 x 600	832 x 624	1024 x 768
Dot clock(MHz)	50.000	49.500	57.280	65.000
f h	48.077kHz	46.875kHz	49.722kHz	48.363kHz
A (us)	20.80 (1040dots)	21.333 (1056dots)	20.11 (1152dots)	20.677(1344 dots)
B (us)	2.400 (120 dots)	1.616 (80 dots)	1.117 (64 dots)	2.092(136 dots)
C (us)	1.280 (64 dots)	3.232 (160 dots)	3.911 (224 dots)	2.462(160 dots)
D (us)	16.00 (800 dots)	16.162 (800 dots)	14.52 (832 dots)	15.754(1024 dots)
E (us)	1.120 (56 dots)	0.323 (16 dots)	0.559 (32 dots)	0.369(24 dots)
f v	72Hz (72.188)	75Hz (75.000)	75Hz (74.546)	60.004Hz
O (ms)	13.85 (666 lines)	13.333 (625lines)	13.41 (667 lines)	16.666(806 lines)
P (ms)	0.125 (6 lines)	0.064 (3 lines)	0.060 (3 lines)	0.124(6 lines)
Q (ms)	0.478 (23 lines)	0.448 (21 lines)	0.784 (39 lines)	0.600(29 lines)
R (ms)	12.48 (600 lines)	12.80 (600lines)	12.55 (624 lines)	15.880(768 lines)
S (ms)	0.770 (37 line)	0.021 (1 line)	0.020 (1 lines)	0.062(3 lines)
SYNC. H/V POLARITY	+ / +	+ / +	- / -	-/-
SEP . SYNC	Y	Y	Y	Y

MODE NO.	13	* 14
RESOLUTION	1024 x 768	1024 x 768
Dot clock(MHz)	75.000	78.750
f h	56.476kHz	60.023kHz
A (us)	17.707(1328 dots)	16.66 (1312dots)
B (us)	1.813(136 dots)	1.219 (96 dots)
C (us)	1.920(144 dots)	2.235 (176 dots)
D (us)	13.653(1024 dots)	13.003 (1024dots)
E (us)	0.320(24 dots)	0.203 (16 dots)
f v	70.069Hz	75Hz (75.029)
O (ms)	14.272(806 lines)	13.328 (800 lines)
P (ms)	0.106(6 lines)	0.050 (3 lines)
Q (ms)	0.513(29 lines)	0.466 (28 lines)
R (ms)	13.599(768 lines)	12.795 (768 lines)
S (ms)	0.053(3 lines)	0.017 (1 line)
SYNC. H/V POLARITY	-/-	+/+
SEP . SYNC	Y	Y

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CLASS NO.

15"TFT XGA LCD Monitor / TV

TYPE : 150MT10P/00C

BRAND : PHILIPS

8639 000 11717

2001-10-02

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3.3.1.3 Horizontal scanning

Sync polarity : Positive or Negative
Scanning frequency : 30 - 61 KHz

3.3.1.4 Vertical scanning

Sync polarity : Positive or Negative
Scanning frequency : 56 - 75 Hz

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PHILIPS

3.3.2 TV Interface

Color system:
NTSC
PAL
SECAM

White point :
Normal(Natural) : x=295+/-20 y=315 +/-20
Warm(Soft)
Cool(Rich)

SOUND POWER OUTPUTS :
- Stereo : 2 x 2.5 Watts,

SOUND CONTROLS :
- Volume
- Mute
- Treble
- Bass
- Balance
- Smart sound
- AVL :
- **SOUND MUTE** : When no video recognition on terrestrial tuner signal the sound must be muted.

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PHILIPS

TELETEXT (For Europe, AP)
100 pages
BASIC : - TXT on/off
- Hold (Stop acquisition)
- Double height
- Reveal
- Subcode (Clock/time)
- Mix
- Cancel/recall
- Index

- Close Caption, V-chip (For Nafta)
  - CC-1 .. CC-4 decoding and display
  - TXT1..TXT4 Text mode
  - No Extended Data Services (EDS)
  - support violence rating and checking
  - Automatic CC-1 selection at user mute

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PHILIPS

4.0 Visual characteristics

4.1 Test conditions

Unless otherwise specified, this specification is defined under the following conditions.

(1) Input signal : As defined in 3.3.1.2, 1024 x 768 non-interlaced mode (60.023 KHz), signal sources must have 75 ohm output impedance.

(2) Luminance setting : controls to be set to 250 Nits with full screen 100 % duty cycle white signal.

(3) Warm up: more than 30 minutes after power on with signal supplied.

(4) Ambient light: 400 -- 600 lux.

(5) Ambient temperature: 25 2 °C

4.2 Resolution

Mode	Resolution	H. freq. / V. freq	Standard
1.	640 x 350	31.469Khz/70.087Hz	VGA
2.	720 x 400	31.469Khz/70.087Hz	VGA
3.	640 x 480	31.469Khz/59.940Hz	VGA
4.	640 x 480	35.000Khz/66.667Hz	Macintosl
5.	640 x 480	37.861Khz/72.809Hz	VESA
6.	640 x 480	37.500Khz/75.000Hz	VESA
7.	800 x 600	35.156Khz/56.250Hz	VESA
8.	800 x 600	37.879Khz/60.317Hz	VESA
9.	800 x 600	48.077Khz/72.188Hz	VESA
10.	800 x 600	46.875Khz/75.000Hz	VESA
11.	832 x 624	49.722Khz/74.546Hz	Macintosl
12.	1024 x 768	48.363Khz/60.004Hz	VESA
13.	1024 x 768	56.476Khz/70.069Hz	VESA
14.	1024 x 768	60.023Khz/75.029Hz	VESA

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3.4 Power input connection

Power cord length : 1.8 M
Power cord type : 3 leads power cord with protective earth plug.
Power adapter: +12V +/- 1V 4500mA

3.5 Power management

PC mode

The power consumption and the status indication of the set with power management function are as follows,

STATUS	Horizontal	Vertical	Power Spec	LED
On	Pulse	Pulse	as normal on	Green
Stand-by	No Pulse	Pulse	< 2 W	Flash
Suspend	Pulse	No Pulse	< 2 W	Flash
off	No Pulse	No Pulse	< 2 W	Flash
Power switch off	-	-	< 1 W	Off

TV mode

The power consumption and the status indication of the set with power management function are as follows,

STATUS	Power Spec	LED
On	as normal on	Green
Stand-by	< 2 W	Flash
Power switch	off	< 1 W Off

3.6 Display identification

In accordance with DDC requirement DDC2B.

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PHILIPS

4.0 Visual characteristics

4.1 Test conditions

Unless otherwise specified, this specification is defined under the following conditions.

(1) Input signal : As defined in 3.3.1.2, 1024 x 768 non-interlaced mode (60.023 KHz), signal sources must have 75 ohm output impedance.

(2) Luminance setting : controls to be set to 250 Nits with full screen 100 % duty cycle white signal.

(3) Warm up: more than 30 minutes after power on with signal supplied.

(4) Ambient light: 400 -- 600 lux.

(5) Ambient temperature: 25 2 °C

4.2 Resolution

Mode	Resolution	H. freq. / V. freq	Standard
1.	640 x 350	31.469Khz/70.087Hz	VGA
2.	720 x 400	31.469Khz/70.087Hz	VGA
3.	640 x 480	31.469Khz/59.940Hz	VGA
4.	640 x 480	35.000Khz/66.667Hz	Macintosl
5.	640 x 480	37.861Khz/72.809Hz	VESA
6.	640 x 480	37.500Khz/75.000Hz	VESA
7.	800 x 600	35.156Khz/56.250Hz	VESA
8.	800 x 600	37.879Khz/60.317Hz	VESA
9.	800 x 600	48.077Khz/72.188Hz	VESA
10.	800 x 600	46.875Khz/75.000Hz	VESA
11.	832 x 624	49.722Khz/74.546Hz	Macintosl
12.	1024 x 768	48.363Khz/60.004Hz	VESA
13.	1024 x 768	56.476Khz/70.069Hz	VESA
14.	1024 x 768	60.023Khz/75.029Hz	VESA

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4.3 Brightness: >250 nits at maximum contrast and Brightness.
(at center of the screen, Fig. 1)

4.4 Image size
4.4.1 Actual display size
304.1x228.1mm

4.5 Brightness uniformity

Set contrast at 100% and turn the brightness to Max.(At original color)

Apply the Fig 1, it should comply with the following formula:

$$\frac{\text{Minimum luminance of five points (brightness)}}{\text{Maximum luminance of five points (brightness)}} > 80\%$$

4.6 PC White color adjustment

There are two factory preset white color 9300K and 6500K.

Apply full white pattern, with brightness in 100 % position
and the contrast control at 50% position.
The 1931 CIE Chromaticity (color triangle) diagram (x,y)
coordinate for the screen center should be:

9300K CIE coordinates	X = 0.281 0.020
	Y = 0.311 0.020
6500K CIE coordinates	X = 0.312 0.020
	Y = 0.338 0.020

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4.7 TV White color adjustment

There is one factory preset white color x=295+/-20 y=315 +/-20 for TV RF signal.

Use FLUKE54200 color temp pattern, with TV smart setting set at natural (movies at Nafta) mode.
And color setting is normal.
Use The 1931 CIE Chromaticity (color triangle) diagram (x,y)
coordinate for the screen center should be: x=295+/-20 y=315 +/-20

4.8 TV picture centering.

Use CVBS input with cross hatch pattern to check the picture centering and should be
Left(size)-right(size) < +/- 3mm.
Up(size)-down(size) <+/- 3mm.

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PHILIPS

5.0 Mechanical characteristics

5.1 Controls

Front Control : - DC power switch
! Power LED
! PC/TV LED
! PC/TV select key
! TV/Video source select key
- Up key
- Down key
- Left key
- Right key
- Enter key
- PIP ON/OFF key
- Auto adjust key

Rear I/O :
- PC D-sub signal cable
! DC 12V input
! Tuner input
! SCART input (Europe model)
! Cinch input (NAFTA and AP model)
! S-Video input
! RCA L,R audio input (audio input for S-Video)
! Mini jack PC audio input

Side I/O :
! Headphone output
! Line output

5.2 Unit dimension / Weight

Set dimension (incl. pedestal): 391mm W X 366mm H X 220mm D

Net weight : : 5.1 Kg

5.3 Tilt and swivel base

tilt angle : -5 to 30 degree

5.4 Transportation packages

5.4.1 Shipping dimension/Weight
Carton dimension : 497mm W X 462mm D X 250 mm H
Gross weight : 8 Kg

5.4.2 Block unit / Palletization (Air shipment)

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5.4.2 Block unit / Palletization (Air shipment)

layers/block	sets/layer	sets/block unit
6	4	24

6.0 Environmental characteristics
The following sections define the interference and susceptibility condition limits that might occur between external environment and the display device.

6.1 Susceptibility of display to external environment
Operating
- Temperature : 0 to 35 degree C
- Humidity : 80% max
- Altitude : 0-3658m
- Air pressure : 600-1100 mBAR

Storage
- Temperature : -20 to 60 degree C
- Humidity : 95% max (< 40℃)
- Altitude : 0-12192m
- Air pressure : 300-1100 mBAR

Note: recommend at 0 to 35C, Humidity less than 60 %

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PHILIPS

6.2 Transportation tests

Standard		Philips UAN-D1400	NSTA
Drop Test	Height	76 cm	76 cm
	Sequence	1 corner 3 faces (-10deg C x 16 hrs)	1 corner 3 edge (roon temp) 6 face
	Test Result	Electrical function ok Mechanical function ok No serious damage on set appearance (room temp./-10 c, humidity 70 %)	
Vibration Test	Sequence	(1) PACKAGING 5-200 Hz , 0.73 G , 30 min. for Each axis	
		(2) OPERATING 10-50-10 Hz , 0.35 mm , 30 min. for Each axis	
	Test Result	Electrical function ok Mechanical function ok No serious damage on set appearance	
Bump Test	For design evaluation only Operating 10 G, 11 msec, 1000 cycles Temperature : 23 C Humidity : 60 % air pressure : 100 kpa (according to DSD draft standard UAN-D636)		

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6.3 Display disturbances from external environment
According to IEC 801-2 for ESD disturbances

7.0 Reliability

7.1 Mean Time Between Failures
System MTBF (Excluding the LCD panel and CCFL) : 50,000 hrs
CCFL MTBF : 50,000 hrs

8.0 Quality assurance requirements

8.1 Acceptance test
according to MIL-STD-105D Control II level

AQL : 0.65 (major)
2.5 (minor)
(please also refer to annual quality agreement)

9.0 Serviceability
The serviceability of this monitor should fulfill the requirements which are prescribed in UAW-0346 and must be checked with the check list UAT-0361.

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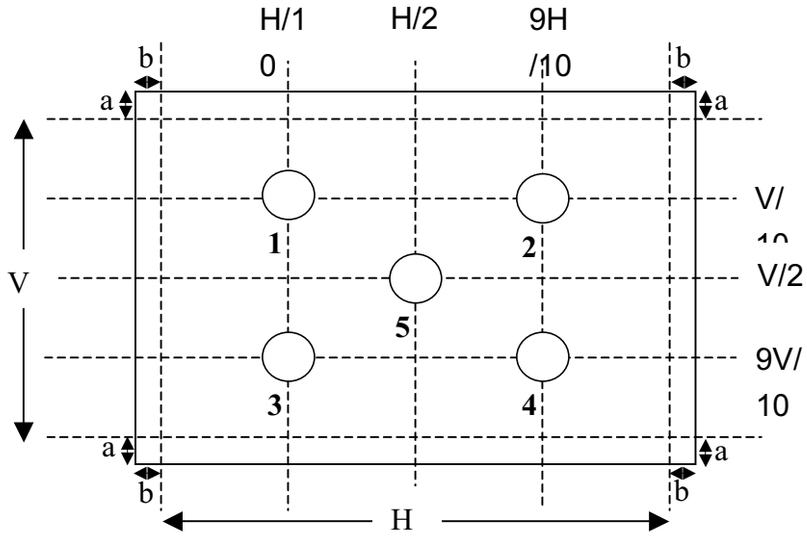
Fig 1: Brightness and Uniformity measure points



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CLASS NO.	15"TFT XGA LCD Monitor / TV TYPE : 150MT10P/00C BRAND : PHILIPS	8639 000 11717
2001-10-02		

NAME K.C Chien	SUPERS.	36	590 — 36	10	A4
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